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Original Articles

THE INFLUENCE OF GONORRHEA AS A FACTOR OF DEPOPULATION*

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WASHINGTON, D C

That the birth rate in this country is surprisingly low will be admitted by all who have noticed the decreasing size of American families and familiarized themselves with the researches of prominent sociologists as to the cause of this national calamity

This fact has been accentuated by Englemann, who believes that the birth rate in America is lower than that of any European country, except France, and who states that the birth rate of the American born population is much lower than that of France, and that the fecundity of American women is lower than that of any other country

Cleveland devoted the major part of his presidential address at the Washington meeting of the American Gynecological Society to the destructive effects of venereal diseases on the female pelvic organs He appointed a committee to investigate this subject and report next year Especial prominence is to be given in this report to the influence of venereal diseases in causing sterility

Ward insists that, in spite of the progress of gynecic science, the number of children to each marriage has decreased from 4 5 in the eighteenth century to 2 5 at the present time, and that, while voluntary "race suicide" is alarmingly prevalent, there is still that great multitude who, through no wish of their own, are childless and spend their time and money in seeking relief

While there are many causes of sterility in both sexes, the object of this paper will be to discuss the influence of the gonococcus on the male and female generative organs as a depopulator of the human race As the time limit for the reading of the several papers of this symposium is necessarily very short, I shall omit most of the discussion and the general argument and rely for the proof of my contention chiefly on the statement of what appear to be facts and on dry statistics

At the outset it may be stated that the subject will be presented under the following heads

1 The frequency of gonorrhea in the male
2 The results of this infection in the causation of sterility
3 The frequency and results of the gonococcic infection of married women and the relation of these results to sterility
4 The practically incurable nature of these infections, except by surgical methods, as, while saving life, result finally in preventing further conception
5 Sterilizing end results of the vulvovaginitis of little girls
6 Influence of the gonococcus in the causation of abortion and premature labor
7 Gonorrhea as a probable cause of extrauterine pregnancy
8 "One child sterility"
9 The cause of much chronic invalidism which persistently inhibits conception

One may state safely that gonorrhea is the most frequent of adult diseases The lowest estimate which we meet in recent literature is that at least 75 per cent of the male inhabitants of our cities between the ages of 18 and 28 have had or now have this disease Its frequency is placed by many at a much higher rate, varying from 75 to 95 per cent It is probable that the latter figure is more nearly correct than the former

The curability of this infection is not assured short of six months' treatment and observation in the milder cases In the severer degrees of infection, involving the posterior urethra and seminal vesicles, it is doubtful if a radical and permanent cure can ever be promised which will make the wife perfectly secure from gonococcal infection.

The statement of Noeggerath in regard to the latent powers of the germ of Neisser have been generally accepted by the profession It is now held to be quite possible for the wife to be infected by a husband who honestly believed himself cured of an attack which occurred several years before his marriage and from which he had, for a long time, been free from any gross symptoms

Wertheim has demonstrated that even in cases in which the husband has been assured by his physician that he is cured it is still possible for the excesses and excitements of the newly married state to revive into virulent activity latent gonococci which had been hibernating for years in the deep recesses of his generative tract These, when deposited in the virgin soil of his wife's vagina, can cause a characteristic specific infection

The pathetic part of this unexpected and heretofore misunderstood condition is that the innocent victim of the husband's early unchastity is accused of causing the infection Believing himself free from the disease, he naturally thinks his wife has lapsed from virtue, acquired the disease from some one else, and infected him, when, in reality, it is one of his own unrecognized chickens come home to roost

It was formerly believed that "in nine out of ten childless marriages the fault was that of the wife" It is now known that in a much larger proportion than was suspected the husband himself is sterile, and that in a great number of cases this sterility is caused by the effects of gonorrheal infection Dr Hagner, of Wa[illegible]ington, a specialist in genitourinary diseases, in a [illegible]cent paper on sterility in the male, states that, "as a net result of many investigations, it may be stated, in ge[illegible]eral that in cases of unfruitful marriages the husb[illegible] is the sterile member of the family in about one cas[illegible] six."

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According to Kehrer, the cause of childless marriages is nowadays sought much oftener on the side of the man He found that in 96 investigated cases of sterility in man 63 had a history of gonorrhea with infection of the epididymis and prostate Noeggerath found 8 unfruitful marriages in a series of 14 cases to be the fault of the male, and Gross, in 192 cases, found the male deficient in 18 per cent Brothers places the responsibility with the man in 20 per cent Reis says it is 30 per cent, and Kehrer, 31 5 per cent Lier and Asher found that out of 424 childless marriages 169, or 40 per cent, were due to sterility of the husband Vedder, of Christiania, in 310 cases, by including all cases of sterility in women due to gonorrhea acquired from their husbands, found the man at fault to the extent of 70 per cent

The principal cause of sterility in men is stated to be bilateral gonorrheal epididymitis Bengler, in 1898, found that among soldiers in the German army who had been married three or more years, 10 5 per cent who had suffered from gonorrhea without epididymitis were childless Of those having bilateral epididymitis, 41 7 per cent were childless Bengler adds that it will be seen from all statistics that epididymitis is by far the most common cause of sterility in the male

From a consideration of the above statistics men are responsible, therefore, for from 18 to 70 per cent of the sterility of the world, and, in the language of Hagner, the "principal cause of sterility in men is bilateral gonorrheal epididymitis" Still greater responsibility might justly be placed on the shoulders of these husbands who, through ignorance, thoughtlessness or unbelief have infected their innocent wives and thus brought about conditions which have resulted in their unwilling or enforced sterility Morrow has pointed out that gonococcal infection is a more potent factor in the production of involuntary "race suicide" than syphilis by the sterility induced in both sexes, but much more frequently in women, on account of the ascending destructive and incurable infection of the tubes and ovaries

Bland-Sutton is correct when he asserts that gonorrhea is the chief cause of the sterility of prostitutes Gonorrheal salpingitis whether it results in pyosalpinx or tubo-ovarian abscesses or not, usually destroys the ciliated epithelium of the tube or so cripples the ovary as to render conception and normal gestation almost impossible

Gynecologists do not profess their ability to restore a Fallopian tube, once infected with gonorrhea, to its normal condition Sterility or some more positive and destructive condition is, therefore, the very common legacy bequeathed to the female victim of this disease A specific endometritis must always be the cause of gonorrheal salpingitis

The frequency of this infection was brought prominently to the attention of the profession by the report of the Committee of Seven on the Prophylaxis of Venereal Diseases in New York City This report indicates "that nearly 30 per cent of all venereal infections occurring in women in private practice in that city are communicated to them by their husbands" Noeggerath stated, in 1876, that of every thousand married men, eight hundred have had gonorrhea from which a great majority of their wives have been infected Another writer of large experience thinks that fully 70 per cent of the women who came to his service for treatment were respectable married women who had been infected with gonorrhea by their husbands Janet, in his "Social Defense Against the Venereal Peril," in speaking of its frequency, says "If we compare from a social point of view the importance of gonorrhea with that of syphilis, gonorrhea is to syphilis as 100 to 1, not only from the standpoint of the number of persons attacked, but also from the standpoint of the gravity of the lesions and their perpetuity, which to-day gives to the surgeons three-quarters of their work and conducts finally both men and women to sterility"

Noeggerath has expressed his belief that 50 per cent of female sterility is caused by gonorrhea Neisser places the proportion from this infection at 40 per cent, while Gruenwald, Kammera and Crolax report 53 per cent, 83 per cent and 40 per cent of endometritis, mesometritis and peritonitis, respectively, all of gonorrheal origin, as causes of sterility in the female

The results of gonorrheal infection of the female pelvic organs are inseparably connected with the discussion of any and all phases of this question, and it is practically impossible for one who has written much on this subject to avoid repetition or to state old points in new or different language

The phase of the gonococcus infection question which especially interests and occupies us to-day is its influence or power as a "depopulator" This influence is again shown in the great number of mutilating and unsexing surgical operations which are required to save the lives and restore the health of a large number of infected women The oft-repeated statement is familiar to you all, that at least one-half of the abdominal operations of the world are necessitated on account of gonorrheal infection While this statement is startling, the sad part of it is that it falls far short of the actual facts Hummeiston states that 90 per cent of his operations are attributable to this cause, some of them, however, being cases of mixed infection Price declares that "in 1 000 abdominal sections for pelvic inflammation 95 per cent were attributable to gonorrhea" Pozzi and Frederick state that their experience puts the proportion at 75 per cent Mann and many other gynecologists hold that, as gonorrheal endometritis is nearly always the cause of pus tubes, for the complete cure of the patient, the practically incurable gonorrheal uterus must be removed also It goes without saying that all these removals of the gonorrheal uterus or its appendages is the indirect cause of sterility while the gonococcus is the primary and direct cause of all this class of mutilating and unsexing surgery

The depopulating influence of this specific infection is seen again in the production of what has come to be known as "one child sterility" It is possible for a woman who has gonorrhea in the anterior portion of her birth canal to conceive and to give birth to a child The child has, however, a very dangerous gauntlet to run to be born alive, as well as to escape ophthalmia neonatorum, which statisticians tell us is the cause of about 30 per cent of the blindness in this country In a previous paper on the effects of gonorrhea on the female generative organs it was stated that there is abundant testimony that specific infection frequently ascends to the pelvic organs after parturition, when this infection only existed below the internal os previous to labor

The way seems to be opened by the parturient act, through slight traumatisms in the endometrium, for the lodgment, subsequent development and multiplication of these germs and their further ascent to the tubes and ovaries Morrow declares that "after accouchement the tissues of the genital organs are in a peculiar state of inhibition and infiltration which offers to the gonococcus a favorable soil for its proliferation, and that the aptitude of a gonorrheic woman for conception is often extinguished by the first pregnancy, the one child representing the sum total of her reproductive energy "

The pernicious influence of the gonococcus is again shown as a "depopulator" in the causation of many more abortions and premature deliveries than have heretofore been attributed to it Sanger contends that "as many abortions are caused by gonorrhea as by syphilis" Noeggerath states that of 53 women, known by him to be suffering from the effects of gonorrhea, 19 aborted Frughinsholz found that in 101 pregnancies occurring in gonorrheic women 23 aborted Williams insists that 73 per cent of all abortions are due to endometritis which is without doubt chiefly caused by gonorrheal infection, when not due to puerperal sepsis

While many authorities might be quoted in favor of this proposition, it is difficult to prove its direct causative effect Without doubt modern writers believe that gonorrhea is, much more frequently than was formerly taught, the cause of abortion

The causes of extrauterine pregnancy have never been definitely formulated and clearly stated in the text-books on obstetrics or gynecology, but it is claimed by recent writers on social diseases and abdominal surgery that gonorrheal salpingitis plays an important rôle in the etiology of this condition

Modifications in the epithelial lining of the tubes occur in mildly latent cases which may arrest the descent of the ovum to its natural bed in the uterus and thus become directly responsible for its tubal development. To the extent that it is the cause of the death of the fetus, of mutilating operations and of fatal results to the mother, just to that extent it becomes another factor in depopulation M Paul Petit sums up the argument as follows

> If this nuptial microbe, apparently benign, is sufficiently attenuated so that it does not produce peritonitis—does not shut the tube at either of its ends (closure fatal for the race, but salutary for the woman)—if, nevertheless, it happens that its delicate cells have lost their vibratile cilia, charged to secure the advance of the fecundated egg, this is arrested in the channel, through which it can not pass, and notwithstanding the heroic efforts of nature to produce a compensatory hypertrophy, the drama still proceeds In the place of becoming enfeebled, the virulence of the microbe becomes cataclysmic, extrauterine pregnancy, much more common than is usually supposed, is constituted, the infant dreamed of, still in its embryonic state, has become for its mother a malignant tumor, and if it does not kill her suddenly by internal hemorrhage—when in apparent perfect health, which is fortunately quite rare—too often it offers her to the reparatory knife of the surgeon, and in the more fortunate cases immobilizes her for many months on a bed of suffering

We have the authority of Jacobi and Currier for the statement that the "vulvovaginitis of little girls" which is generally of gonorrheal origin, has the effect to retard and to frequently prevent altogether the normal development of the uterus and its appendages Women with undeveloped or infantile uteri or ovaries are not only great sufferers from amenorrhea and dysmenorrhea, but are, at the same time unable to conceive, or, if they do, to produce a live child This condition amounts practically to sterility and its first cause is gonorrheal infection during infancy or childhood Recent text-books on pediatrics refer to the vulvovaginitis of little girls as the most frequent and troublesome of institutional diseases and that in the great majority of cases they are caused by gonorrheal infection

It is not, of course, suggested that their infection resulted from any sexual relation with the opposite sex, but was communicated from one to another in a great variety of ways

Caille gives an example in his treatise of the spread of this infection in a public institution in New York harboring 850 children, 130 cases of so-called leucorrhea developed, in two months, which proved, on investigation, to be gonorrheal in nature Much more similar evidence could be produced if there was time to read it

In addition to the above charges in the indictment against the "nuptial microbe," as M Paul Petit calls it, we have the large number of indeterminable cases where no surgical operations are performed, where no organs necessary to procreation are removed, and yet the women are living lives of chronic invalidism, which too frequently means lives of chronic gonorrheal infection, the ultimate effect of which is to inhibit any further conception

The human race is then "depopulated" to the extent that children are denied to these chronic invalids Their number it is impossible to determine, but, arguing from a permissible analogy, the charge against the gonococcus gains enormous and blacker proportions It may be said to have fairly earned the title of the "chief moral and physical pest of our age," and in contradistinction to tuberculosis, might be called the "great black plague"

926 Farragut Square

SYPHILIS AS A CAUSE OF DEPOPULATION AND RACE DETERIORATION *

EDWARD L. KEYES, Jr., M.D., Ph D
NEW YORK CITY

The effects of syphilis are as complex and difficult to ascertain as the effects of gonorrhea are definite and directly attributable to this disease alone For example, gonorrhea causes rheumatism by specific inflammation of the joint, while syphilis causes paresis by some vague means of which we are none too sure, and with the aid of certain other factors which we can not definitely ascertain, but which make one race far more vulnerable than another

In the matter of heredity, gonorrhea destroys the race either by sterilizing a potential parent or by blinding a new-born infant, while syphilis leaves the parent neither sterile nor impotent, the child it may kill or brand with indelible disfigurement, or it may simply leave him liable to destruction by other agencies, notably by tuberculosis Finally, the problem of race deterioration by syphilis is still further complicated by the alcoholism, the debauchery, and the moral perversion that so often complicate the disease in the parent and join with it in degenerating the child

Such being the case, let us, from as firm a foundation as possible and beginning with the effects of syphilis *per se*, consider the disease briefly as it relates to the individual—more in detail as it relates to his or her descendants.

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In the matter of heredity gonorrhea destroys the race either by sterilizing a potential parent or by blinding a new-born infant, while syphilis leaves the parent neither sterile nor impotent, the child it may kill or brand with indelible disfigurement, or it may simply leave him liable to destruction by other agencies, notably by tuberculosis Finally, the problem of race deterioration by syphilis is still further complicated by the alcoholism, the debauchery, and the moral perversion that so often complicate the disease in the parent and join with it in degenerating the child

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ACQUIRED SYPHILIS

According to the United States Census of 1900,[1] about 3,000 deaths directly attributable to acquired syphilis occur in the United States every year This is about 3 in every 1,000 deaths, and puts syphilis in the class with malaria, cerebrospinal meningitis, septicemia, alcoholism, diabetes and appendicitis

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The mortality statistics of life insurance companies tell the same story from a different point of view The estimated mortality of syphilitics, according to the report of the Actuarial Society of America,[2] is 133 as compared with 100 non-syphilitics Thus the acquisition of syphilis by the average American decreases his expectancy of life by about one-third So much for mortality

As a cause of inefficiency syphilis stands high I have tabulated some 2,500 cases of syphilis in the better class of patients, and find that about 4 per cent of them have locomotor ataxia, a little over 1 per cent have paresis, and an indefinite number more are debilitated by various other manifestations of the disease

The Surgeon-General's report for 1905 shows that in the United States Army syphilis stands ahead of every other malady as a destroyer of careers, having caused, in the year 1904, 166 men to be discharged from the Army, whereas tuberculosis caused a loss of only 101 men This fact alone would be enough to mark syphilis as one of the scourges of the human race There are more soldiers in the United States Army rendered permanently unfit to follow their profession as a result of this disease than of any other

In comparison with these statistics, referring to our own countrymen, the quotation of those obtained by foreign observers is, I believe, of less value, yet it bears out the same thesis and adds a few suggestive details According to the figures collected and compiled by Blaschko in Germany and Fournier in France, it would appear that from 5 per cent to 20 per cent of the male inhabitants of the larger European cities are infected with syphilis, though the disease is less prevalent in the smaller towns and in the country districts Syphilis is at least four or five times more frequent in men than in women

HEREDITARY SYPHILIS

The transmission of syphilis from parent to unborn child has long been recognized, though the method of transmission has formed a subject of warm debate But he fact alone interests us The disease may be transmitted to the fetus *in utero* and may work three results

1 It may destroy the fetus and cause its abortion

2 It may kill it at about the time of birth—a short time before or after the event

3 The child may be born alive, but bear evidences of the disease, or may develop these weeks or months or years later

Abortion, still-birth (or death in infancy) and syphilis of the child are, therefore, the three classes of hereditary syphilis To these we must add the very imminent danger to young children from parents infected after their birth

According to the statistics of Fournier, the mortality ascribable to hereditary syphilis in hospital practice reaches 85 per cent that is to say, 85 out of every 100 children born of actively syphilitic parents die ither before birth or shortly thereafter In private practice on the other hand the mortality falls as low as 60 per cent and when the mother is apparently und but the father obviously infected, as low as 28 cent

he statistics of individual cases are still more shocking In one instance (Ribemont-Dessaigne) a woman became pregnant nineteen times only to lose eighteen of her children by abortion or still-birth, a single child survived And Fournier has even found it possible to collect a consecutive record of 157 births with 157 deaths—every single one failing to survive

This so-called "polymortality" is the great stamp of hereditary syphilis But such statistics are derived from cases of recent or of neglected syphilis They represent conditions which are found in this country only under relatively exceptional circumstances of ignorance and over-population

Let me hasten to add for the benefit of my non-medical listeners that well-treated syphilis ceases to be transmitted to wife or children within a very few years Yet the United States Census of 1900, taking no account of *miscarriages—although* these form about one-half of syphilitic mortality—reports 675 infants dead of hereditary syphilis in the first year of their lives

Apart from locomotor ataxia and paresis, more than one-half the deaths due to syphilis in the United States to-day occur in children less than one year old

Personal records of office cases, though not very large, express fairly accurately the dangers of hereditary syphilis among fairly intelligent people and elucidate certain important points in regard to this inheritance

Among 27 patients who acquired syphilis when married, or who married within a year after acquiring it, 25 infected their wives (or husbands) *Of those marrying* in the second year of the disease, 10 proved infectious, 4 not so In the third year, 4 were infectious, 16 not so In the fourth year one was infectious 4 (and probably many more) not so Beyond this I have no records, but of the hundreds (literally) who have married during the fifth year of the disease, only 2 proved infectious, while there is a single alleged infection in the seventh year

Moreover, in 41 cases the party of the second part was infected during the first year of exposure (almost always within the first few months) Only once was infection delayed one year until after the birth of a healthy child, who was last seen in perfect health at the age of 7

Thus the danger of marital infection is instant and the chances for it are at least 12 to 1 during the first year of the disease, 5 to 2 in the second year, 1 to 4 in the third year, and all but nothing after the fourth year —whether the patient has been well treated or not So much for the danger of transmission in matrimony The danger to the child, the product of matrimony, is greater

Fournier states that of 90 women infected within a year of the chancre in the male 50 aborted, 38 bore children who died in infancy, and only twice did the first born live

To these figures let me add my own They are small in comparison, yet they strike closer home, inasmuch as *they are a home product, not an importation* and derived from an office, not a hospital practice Hence they represent at least a fairly intelligent class of patients Yet the index of nocivity among these infants, i e, the number aborted, killed or at least infected by syphilis, is simply shocking

Among 43 women innocently affected with syphilis in matrimony and who bore children after such infection, only 2—think of it only 2—escaped bearing at least 1 syphilitic child, and this exception is fully compensated by the 3 who, before realizing they had the disease themselves, infected a child whom they had previously brought into the world healthy

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[2] Personal communication by Dr W M Bross

Of the infecting 41

23 bore 1 syphilitic child (or fetus), and 5 bore healthy children later
8 bore 2 syphilitic children and 6 bore healthy children later
4 bore 3 syphilitic children and 2 bore healthy children later
2 bore 4 syphilitic children and 2 bore healthy children later
3 bore 5 syphilitic children and no others
1 bore 8 syphilitic children and 6 healthy ones
41 86

The last was the poorest and most ignorant of the lot she should be really classed as a hospital case Doubtless many more of those who bore but one syphilitic child bore healthy children after they had passed from my treatment and observation, just as many of their sisters who acquired syphilis without a husband have gone through their treatment at my hands and then married and borne perfectly healthy children

Why this difference? Why does the unmarried syphilitic woman so commonly become competent to bear healthy children, while syphilis of the wedded victim almost inevitably impairs the health or destroys the life of at least one child?

The difference lies in knowledge and the lapse of time The innocent wife does not realize she is diseased until she brings into the world her first syphilitic child, does not perhaps realize it even then—witness the frequency of multiple syphilitic heredity—but the woman forewarned and forearmed is in little danger My statistics enforce this point In 37 cases the interval between infection of the mother and the birth of the first syphilitic child (or fetus) is known In 32 it was a year or less, thrice between 1 and 2 years, and twice at 2½ years On the other hand, the interval before the birth of a healthy child was twice 2 years, ten times 3 years, twice 5 years, once 7 years and once 10 years

In order to interpret these figures more clearly, let me invite your attention to the charts founded on them and arranged to show the parallel between the danger to a wife from an infected husband and the danger to an unborn child from an infected mother

Chart 1 compares the duration of matrimony before infection was transmitted to the wife with the duration of the mother's disease before it was transmitted to an unborn child as calculated by the first birth or miscarriage The lines, you note, run practically parallel the infection is immediate

Chart 2 compares the duration of syphilis in the husband at the time that he married and infected his wife with the duration of syphilis in the mother at the time she ceased to bear syphilitic children The lines again run parallel, and, as Chart 1 is calculated to illustrate the instant infectiousness of early syphilis, Chart 2 is calculated to show its gradual dying out

Chart 3, on the other hand, shows the opposite side of the picture—the chance of avoiding infection—and is a comparison of the duration of syphilis in the man before marriage to a woman whom he did not infect with the duration of syphilis in the woman before the birth of her first healthy child The sharp rise at the third year forms a most graphic contrast with the equally sharp fall in Charts 1 and 2, and shows that whether for wife or for child—and in some degree independent of the treatment—the infectiousness of syphilis falls off sharply in the third year The latter part of Chart 3 is traced in interrupted lines, because the few recorded cases here merely represent the fact that, as the patients become well, they no longer return for observation, excepting the meager few whose disease continues more fierce than the average These scanty data have no statistical value

From this jumble of statistics I wish to draw just one conclusion, viz Syphilitic marital infection and syphilitic heredity are appallingly frequent in the first two years of the disease, but diminish rapidly thereafter, especially if the influence of time is fortified by proper medical care

LATE HEREDITARY SYPHILIS

The child who survives in spite of a hereditary syphilitic taint may develop symptoms of the disease at birth or not until many years thereafter But, even though these syphilitic symptoms are controlled by appropriate and skilful treatment, there remain certain developmental peculiarities which attest to the experienced eye the presence of a syphilitic heredity and some of which impair the child's future usefulness as a citizen

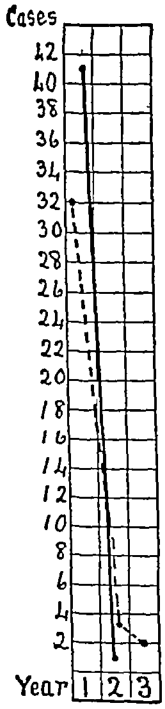

Chart 1

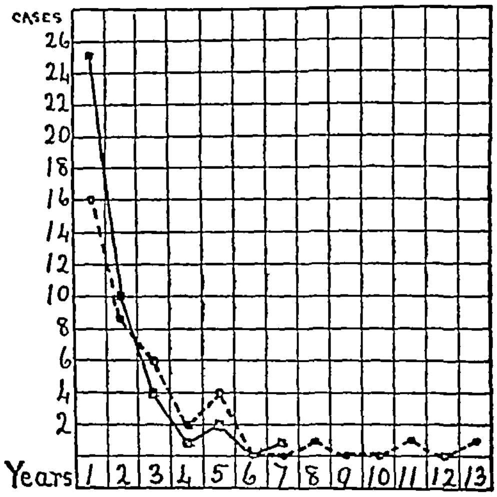

Chart 2

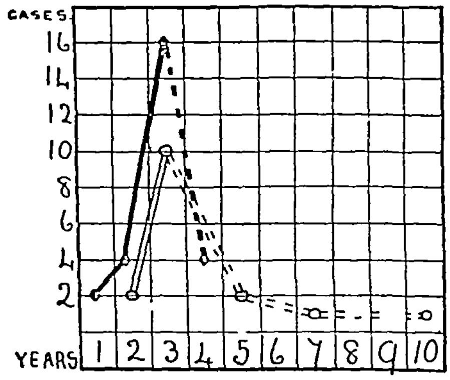

Chart 3

Chart 1—Beginning of infection comparing duration of matrimony before wife becomes infected with duration of wife's disease before unborn child becomes infected. Solid line—husband to wife broken line—mother to child.

Chart 2—Duration of infection comparing duration of syphilis in husband at time of infecting wife with duration of syphilis in wife at time she ceased to bear syphilitic children Solid line—age of infectious syphilis in husband (to wife) broken line—birth of last syphilitic child to wife

Chart 3—Beginning of non infection comparing duration of syphilis in man before marriage to woman he did not infect with duration of syphilis in the woman before birth of first healthy child Single line—age of non infectious syphilis in husband double line—birth of first non syphilitic child (to mother) broken lines—statistics incomplete

Thus the later evidences of hereditary syphilis may be separated into three classes 1, Active lesions of the disease, 2, evidences or scars of healed syphilitic lesions 3 dystrophic conditions attributable to impaired or disordered nutrition.

Of these classes, the first, though the most characteristic, is the least common, the second, almost as typical, is more frequent, the third, though the commonest of all is so little typical as to be a constant source of confusion

1 Instances of the first class, the active lesions, we need not enumerate

2 Striking and familiar instances of the second class are Hutchinson's triad (viz interstitial keratitis, deafness and a peculiar deformity of the permanent upper, central incisors), scars on the skin, perforation of the palate, chorioretinitis, natiform skull, broken-down nose, saber tibia, etc

3 Instances of the third class are not lacking, but they should be interpreted with the greatest care and be accepted as evidence of syphilis *only* when seen in connection with other more definite signs of the disease For example, the victims of hereditary syphilis are usually undersized and poorly developed in muscle, they reach puberty late, the men are relatively beardless Yet it were manifestly absurd to conclude that every individual showing these characteristics is a heredo-syphilitic Every medical man here can call to mind innumerable exceptions to such a rule, or, I should say can call to mind more exceptions than exemplars

The same holds good of many other deformities The vaulted palate, the hare-lip, the knock-knee, the clubfoot, as well as the grosser malformations, such as dwarfism, monstrosity, idiocy, imbecility, etc, may indeed result from the debilitating effect of hereditary syphilis, but they are as often due to other causes Such a statement may sound obvious to those of you who are not aware of the lengths to which European syphilographers —especially the French—go in the effort to prove syphilis the fount and origin of every hereditary defect

As a matter of fact, the unbiased practitioner is far more often impressed by the absence of congenital deformities in syphilitic infants than by their presence It is surprising that a disease so destructive in its activity should inhibit normal development so little Generally speaking, one may accept the rule that hereditary syphilis spends its force on the infant If it escapes with body and brain intact, it is likely thereafter to remain as sound as its parent—perhaps even more so What, then, becomes of the surviving children of syphilitic parents? They may be divided into three classes

1 Some are not syphilitic or diseased in any sense These are the children of parents whose disease has been watched and treated intelligently Among the upper classes such healthy children easily outnumber the diseased, and *even among the poor and ignorant of our large cities they almost equal them*

2 Some are syphilitic and continue to have relapses of syphilis Such relapses, though most unusual, are apt to appear at the time of puberty Edmond Fournier[3] alleges that they may result in transmission of the disease even to the third generation This thesis, though *not accepted by every syphilographer, is all but proved* The names of Taylor, Fournier and Hutchinson lead those who accept it, while Tarnowski, Barthélemy and some German authors incline to it But the cases are extremely rare and are bred in such an atmosphere of neglect ill treatment privation and debauch that the hereditary syphilis seems almost an incident rather than a le cause of the resultant degeneracy

The greater number of syphilitic children who survive depend for their future health entirely on the hygienic and medical treatment they receive in infancy If intelligently handled, the stunting, disfiguring and enfeebling influence of the disease is overcome in the majority of instances But if neglected or if so overwhelmed by the disease that no treatment can cure them before their developing tissues are *permanently* scarred, their vitality permanently impaired, they *are doomed to grow* up defectives and peculiarly subject to rachitis and tuberculosis

The relation between rachitis and syphilis has long *since been determined* Parrott believed and taught that every rickety *child* was syphilitic, but subsequent investigation has clearly shown that this is *not the case*, that syphilis is only one among many potential, debilitating causes of rickets Indeed, when I was a *medical* student in New York City, a decade since, hereditary syphilis was common enough in our clinics, while a case of rachitis was quite unusual

The same is true *of tuberculosis* Sargent[4] has recently collected much evidence *in the matter*, and, with a wealth of authoritative quotations, enforces his conclusions that "la syphilisation du père a preparé le terrain pour la tuberculisation du fils"—"syphilis in the *father* prepares the soil for tuberculosis in the son This aphoristic statement expresses the actual condition not quite accurately It is *necessary* to distinguish as follaws

1 Syphilis in the father, if severe or *if allied with* other debilitating influences, such as drink, deprivation or debauch, prepares the father's own soil for tuberculosis

2 Syphilis *transmitted* from parent to child—hereditary syphilis—exercises the same *predisposing* influence magnified by the difficulty of eradicating the disease from the vulnerable tissues of the new-born

3 But the non-syphilitic child of a syphilitic parent is not predisposed to tuberculosis, unless by such privation *or neglect as* would so predispose it in any event

Since a hereditary tendency *to* tuberculosis and rickets is by no means bound up with an inheritance of syphilis, we are faced with the question *How often* and in what degree does syphilis predispose *to* rickets and tuberculosis? I doubt if the question can be directly answered by statistics Perhaps the nearest we can come to an answer is the parallel between the influence of hereditary syphilis on *rickets and tuberculosis, and that of* acquired syphilis on tabes and paresis

Some evidence may be deduced from the effects of syphilis on different races, which may be briefly summarized as follows In many regions of Asia Minor, Egypt, the Balkan States and other Oriental lands syphilis *is endemic and is found in every* generation of a family and in almost every family of a village or town The children in these countries are often tuberculous, but the adults are never, or practically never, either paretic or ataxic The obvious inference which has been drawn from these facts is that paresis and ataxia, as seen in the civilized communities of Europe and America are due not to syphilis alone, but *to "syphilis and civilization"* as Krafft-Ebing puts it, while the absence of these diseases and the relative frequency of rickets and tuberculosis among syphilitic Orientals show that, in the main, these latter diseases are the appanage of untreated, neglected syphilis By proper care they can almost always be prevented

The influence of syphilis as a cause of depopulation and race deterioration may, therefore be summed up as follows *In the individual,* syphilis causes in the United States to-day 3 per 1,000 of the deaths, and in the Army more discharges for permanent disability than tuberculosis According to the statistics of life insurance companies, it decreases the expectancy of life by one-third *In his descendants,* syphilis is the great cause of infantile polymortality, even among the better classes The infant who survives a hereditary syphilis is likely to fall victim either to relapse of syphilis or to rickets or tuberculosis even though submitted to proper medical treatment and kept in proper hygienic surroundings His efficiency as an adult citizen may be more or less impaired, but the extent of this impairment depends on the intelligence with which his disease is handled in infancy, and the debilitating influences to which he is then subjected

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[3] Syphilis Héréditaire de seconde Génération, Paris, 1906

[4] Syphilis et Tuberculose, Paris 1907

ARTIFICIAL CHILDLESSNESS AND RACE SUICIDE[*]

J NEWTON HUNSBERGER, M.D
SKIPPACK, PA.

Of all fundamental conditions of society none is of greater moment than that of the propagation and preservation of the human race Beside it all other sociologic and material conditions fade into insignificance For it is self-evident that only a few decades without a single birth would mean practically the depopulation of the entire earth, and though this will probably not occur, yet we are undoubtedly facing a diminishing birth rate, especially among the better class of American-born citizens

I will not tire you with statistics, for they are often incorrect and usually misleading, but I would ask each one of you to compare the number of children born twenty years ago in your immediate neighborhood with the number born to-day, and I feel sure that you will note a decided reduction

Fifteen years after I was graduated in medicine there were inquiries made of the one hundred and twenty-four members of the class Eighty-one replied Of this number sixty-four had been married and had had born to them one hundred and five children Comment is needless For we all know that a birth rate so low as this, if it held good among all classes, would mean the rapid depopulation of any community And coming from physicians, who should know, if any one does, what it all means, it seems especially deplorable Possibly we would best cast out first the beam from our own eye before attempting to remove the mote which is in our brother's eye

In Massachusetts, where vital statistics are accurately kept, the decline of the birth rate among those families who have lived there for generations has been alarmingly rapid In inquiries made by the colleges regarding the number of offspring which the various classes twenty-five years after graduation of both sexes, had, the reports all show an exceedingly small percentage of children But why reiterate what every thoughtful physician knows, that the birth rate among the class best equipped to have and to rear children is very much lower than it should be

I am aware that among the very wealthy, with some exceptions families are small, but as they form such a small percentage of the entire population they need not be seriously considered It is also true that among the very poor and shiftless we frequently see large families, but they again form but a small percentage It is in the great middle class, the class from which have sprung, and from which will continue to spring, the ablest, the cleanest and the best men and women, the "leaven which leaveneth the whole lump," and who constitute the backbone of our national supremacy, in this class, I repeat, the birth rate has fallen off most markedly Do we understand and fully appreciate what this means?

It means that the curse of selfishness is sapping the very roots of life It means the decay of spiritual ideas and the death of true patriotism It means the breaking up of homes It means the divorce court and the triumph of sensualism The joys as well as the sorrows of parenthood do more to redeem men and women than all the religious creeds in the universe Children are the only true missionaries, the only beings really Christlike "Except ye become as one of these little ones, ye shall in no wise inherit the kingdom"

The responsibility which children bring inculcates self-denial and self-restraint Thinking for others becomes a habit. Those who are childless, through their own wrong doing, do not know the pleasures of self-denial, their natures become narrow, selfish and warped and their souls atoms It is a truism that from large well-born families come the best citizens They early learn self-reliance, are free from false sentiment, are tolerant and helpful to each other, and lose the egotism and self-consciousness so commonly seen in an only child Luxury seldom enters into such homes Satiety is unknown with its blasé expression Want may even show his gaunt form But in spite of all this, there are more manly men and womanly women found in large families and more real happiness, than is ever dreamed of by a childless couple or where a single child is surfeited, stunted and spoiled by needless luxury and display The large families of our forefathers were big factors in the building of our nation, while we are slowly but surely drifting to the shoals of a decreasing birth rate, on which France has already stranded her best hopes, with its selfishness, worldly prudence and sensualism for which it stands sponsor

We are not brought into this world for ourselves alone, nor is it intended that we should go out of it without leaving some one to fill the place we vacate Humanity has placed a heavy mortgage on each one of us and demands satisfaction, or she will surely exact a penalty And is it a hard mortgage to satisfy? Is a little bundle of pink and white helplessness, as it cuddles its warm body against ours, so very objectionable? And is the clinging clasp of its tiny hands so hurtful? Is there anything in this world—position, wealth, honor or achievement, that can balance it? Listen to William Allen White

> In every heart that is not a dead heart, calloused to all joy or sorrow, some little child is enshrined—either dead or living—and so child love is the one universal emotion
>
> A child's soul is such a small thing, and the world and the systems of worlds, and the infinite stretches of illimitable space, are so wide for a child's soul to wander in, that, sane as we may be, stolid as we may try to be, we think in imagery, and the figure of little feet setting off on the far track to the end of things, hunting God, wrings our heart-strings and makes our throats grip and our eyelids quiver
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> And then a child dying, leaving this good world of ou seems to have had so small a chance for itself There is something in all of us struggling against oblivion, striving vainly, to make a real impress on the current of time, and a child

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[*] Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907

dying, can only clutch the hands held out it and go down—forever It seems so merciless, so unfair Perhaps that is why, all over the world, the little graves are cared for best It is to the little graves that we turn, and not to the larger mounds, in our keenest anguish, to the little graves that our hearts are drawn in our hours of triumph, and so the child, though dead, lives its appointed time and dies only in the fulness of its years The little shoes, the little dresses, the "little tin soldiers, covered with rust," and the memories sweeter than dreams of a honeymoon, these are life's immortelles that never fade

There is a certain proportion of marriages unfruitful through no fault of the individuals These, however, constitute a comparatively small percentage and are the exception As a rule, the childless couple is childless and the family with one or possibly two children is small because means are used to prevent or destroy the product of conception We frequently see one or possibly two children born quite promptly after marriage and then child-bearing suddenly ceases It is plainly evident what is taking place

What reasons and what influences are at work which produce such unfortunate conditions? They are many and varied The extra expense which children bring, probably being as potent a factor as any, coupled with the selfishness that refuses to deprive itself of any pleasure or luxury for the child

There are many young men in the professions or in business who will not marry until financial success is absolutely assured, or if they do, refuse to be burdened with large families Many of the better class of skilled laborers with good wages refuse the little sacrifices necessary to rear a family Girls who had been earning their own living previous to marriage, and who often get erroneous ideas of life through their associations, frequently refuse motherhood Another factor is the living in boarding houses and flats where children and dogs are not allowed It is almost considered vulgar and bourgeois in a certain class, to have a good sized family How the mother of to-day pities and sympathizes with her daughter if she should be so unfortunate as to have a baby, and is not above instructing her how to prevent a repetition of the accident Many, many reasons, but never a good or valid one, and all of them, every one of them, based on selfish motives!

There are also far-reaching influences which play their rôle The so-called emancipation of women, which has come to pass during the last century, with its freedom from medieval slavery This new freedom has been perverted and misconstrued, to mean a relief from the duties and obligations, which, though they may appear burdensome, women can not expect to escape And while woman's sphere is not alone to bear children, yet if she refuses her God-given part toward propagating the race, she is worthy of nothing but scorn—she is not womanly

Though the law may sanction and the church bless, yet such an one just as truly prostitutes the marriage bed as the woman of the street The violent opposition in certain quarters to houses of ill-repute and the time spent on devising ways and means to regulate or abolish them would better be directed in other channels nearer home There are very few of us fit candidates for a stone thrower's license The inmates of these houses are usually deflowered long before they enter the portals and the maudlin sympathy of our specialists would best be withheld until occasion arises when it can be worthily bestowed It is a well-known fact in the underworld that houses of prostitution could not exist if it were not for the patronage of married men Undoubtedly, one of the reasons of this unfortunate condition is the objection on the part of the wife to bear children, while the cold-blooded devices to prevent conception simply drive their husbands from them

Ah! you divorce investigators you are afraid to call a spade a spade, or else are ignorant of conditions as they exist, or you could easily locate a large percentage of the trouble Though I believe the woman is oftenest at fault in preventing conception, yet the husband is usually more than a willing accomplice in the crime *and for reasons less valid than his wife's* Such a man marries only for the selfish gratification of his own passions and is hardly on a par with a brute

The world does homage to the man who works and to the soldier who fights, but to a far greater extent do the right-thinking men and women do homage and reverence to the woman who performs her great duty, and no greater or more ennobling one was ever given to woman than that of propagating her kind In Rome's halcyon days it was the mother, and she who was about to become a mother, who were given precedence and homage savoring of idolatry While this worship continued Rome was superb, unbeaten, matchless When her affections and homage were transferred to mistresses and vestal virgins her boasted supremacy became a byword

It has been proved that among families which can properly have children the population will not materially increase, if there are fewer than four children Three children in a family are insufficient when allowance is made for those who do not marry, for those who physically can not have children, and for the children that die This is a most conservative estimate While I do not believe that the best interests of mankind are served by rearing children with a rapidity that undermines the mother's health or bringing children into a life of abject poverty, wretchedness and disease, yet the hideous vice and crime which marks the prevention and destruction of the product of conception must be abhorrent to every right-thinking man and woman And, mark you, this not the vice of the woman of the street alone, but is practiced by what appear to be the best people of our land, not excepting the clergy It may be the result of thoughtlessness, it may be done through a perverted sense of right and wrong, or it may be moral obtuseness But whatever be the motive back of the act—the act itself is a crime, and nothing can ever give it the garb of respectability

Just a short quotation from President Roosevelt in conclusion

> If a man or woman, through no fault of his or hers, goes through life denied of those highest of all joys which spring only from home life, from the having and bringing up of many healthy children, I feel for them deep and respectful sympathy —the sympathy one extends to the gallant fellow killed at the beginning of a campaign, or the man who toils hard and is brought to ruin by the fault of others But the man or woman who deliberately avoids marriage and has a heart so cold as to know no passion, and a brain so shallow and selfish as to dislike having children, is in effect, a criminal against the race, and should be an object of contemptuous abhorrence by all healthy people

The following taken from a daily paper is apropos

> Paris, Nov 11, 1906—Public attention again has been drawn to the national peril involved in the constantly diminishing birth rate by the publication of the vital statistics for 1905, showing births for the year of 807,292, a decrease of 10,937 from the total of 1904 The reason for this decrease is

not to be found in a reduction of the number of marriages, in which the statistics show a slight increase over 1904, but it apparently arises from the aversion of the French people to raise large families

The national association, which is studying the matter, has reached the conclusion that it is necessary to inculcate the idea that any couple that raises more than three children merits and is entitled to public gratitude and protection

DISCUSSION

ON PAPERS OF DRS EDGAR,[*] JOHNSON, KEYES AND HUNSBERGER.

Dr. Prince A Morrow, New York City, in answer to a question by Dr Stolper as to what states he had reference to that had laws regulating the granting of marriage licenses so as to prevent the propagation of disease, said that the marriage law of Indiana as he recalled it requires the applicant for a license to marry to report to the clerk his freedom from any contagious disease That is a condition of license to marry If he perjures himself and actually transmits the disease to his wife, he becomes amenable to the law There is not only a civil, but, Morrow believes, a penal, responsibility imposed—certainly a civil responsibility The law in Michigan he thinks differs somewhat The law has been in operation Dr Morrow said about two years in Indiana, of the law in Michigan he could not speak with absolute accuracy because he had not referred to it for a year or two, but he thinks it is very much of the same general order

Dr G T Swarts Providence, R I said that the State Board of Health in Indiana issues to all physicians in general practice a certain card circular that states that the fine is $200 or so for marrying if one has syphilis, another card states the penalty for marrying if one has gonorrhea These are given to the patients of the practitioners at the time of the visit, it may be but one visit but they are given this card to take to their homes and think over Thus all patients are warned of the penalty of the law whether they desire warning or not

Dr Liston H Montgomery, Chicago, said that in two cases of gonococcus infection that had come under his observation he used a 25 per cent solution of argyrol One drop was instilled into the eye every two hours, night and day In addition to that not exactly alternating, 1 drop of a 4 per cent solution of nitrate of silver was used three times a day, and also boracic acid compresses were applied to each eye to saturate the tissues the lachrymal sac, etc., as a curative means of destroying the gonococci as well as a probable preventive of silver catarrh The treatment in the two cases referred to cleared up the discharge in ten days In one patient there was a little turgescence remaining The infection seemed to have been cut short and the discharge stopped all at once on the tenth day Even up to the night previous the discharge was considerable and seemingly almost poured out of each eye In that case the infection in one eye seemed to follow two days after the first eye became infected both eyes seemed to clear right up apparently in the tenth night or on the tenth day

Dr. H P Jack, Canisteo, N Y, said that in a recent discussion of this matter of educating the physician and the public as against gonorrheal and syphilitic infection and the dangers of abortion, Dr Howard A Kelly, after going over the subject, decided that the education was useless and the only hope was religion Dr Jack considered this not a sensible position to take In Europe, in some of the clinics, there are three or four conscientious, earnest workers that give to every individual who is suffering from syphilis or gonorrhea a succinct statement, in printed form, explaining the dangers to which he is subjected and to which he may subject others Perhaps the patient does not always read it, but many times he does Such a statement should be given out in all of our great clinics like the Johns Hopkins or the University of Pennsylvania It is an educational means that is before us and this Section ought to take it up Dr Jack said it would be a most excellent idea for this Section to appoint a committee to draft succinct statements of what might or might not happen to a given individual, written in plainest, clearest English, as regards syphilis and gonorrhea, and also as regards the dangers of abortion, that it might be given out by the clinic and by the general practitioner In that way not only will we educate the public, but by these very things we will educate many physicians that never reach a medical association but still do a large amount of the practice of the country

Dr H D Holton, Brattleboro, Vt, said that two years ago a committee of the Conference of State and Provincial Boards of Health prepared such a circular as has been referred to They had, however, no funds wherewith to distribute such a circular The state boards of health of several states took the matter up and the circulars were sent to every physician in some six states Dr Holton expressed regret that the House of Delegates and the Trustees of the American Medical Association had not seen their way clear to make an appropriation to send that circular to every college president in the United States, to every preparatory school and high school If this matter could be placed before the colleges, if the young men in the preparatory schools could be educated in it, it seems that it would be the great work, not only of this Section but of the profession, to educate the people of the United States

A great deal of gonorrhea and syphilis exists from ignorance Innocent parties are affected, as has been suggested, and with the young men in many institutions the matter has been treated in such a way as though it were a pretty good joke on the young man if he contracted one of these diseases They see no seriousness in it to themselves and to their families—or their want of families Dr Holton said he did not know how this can be met, unless a fund is raised whereby such a circular can be distributed in the manner indicated

Dr J H Stolper, Krebs, Okla, suggested a United States department of public health which could send the circular all over the United States The authorities have the free use of the United States printing office, they have the free use of the mail Dr Stolper suggested that this Section appoint a committee to take the matter up with the surgeon general

Dr. S A. Knopf, New York City, said that he does not believe it is wise to always wait on the government to do things when we can do something ourselves He referred to the fact that the chairman has written admirable papers on the subject, and so have other members of the American Society of Sanitary and Moral Prophylaxis, an organization having its headquarters in New York City Dr Knopf said that it is perfectly just to call a spade a spade, and with all due respect to the sensibilities of some men and women, he believes we should not hesitate to distribute such information to our colleges and to our schools He said the mother of his office boy called on him the other day and said "Doctor, won't you please talk to my boy?" He asked her what about "Well, he has nightly emissions and I scolded him about it, and he went to a certain dispensary" (a New York dispensary attached to a large hospital), "and the doctor patted him on the back and said 'My boy, you have got to see somebody and relieve yourself'" Dr Knopf said he thinks that is criminal Instead of giving that boy proper instruction and a proper talk, that boy has not only been led into temptation but guided into temptation—directed to temptation If he had his way he would do what the Germans have done in regard to tuberculosis Interest some great philanthropist and ask the men versed in this particular branch of preventive medicine regarding venereal diseases to write a pamphlet not longer than 20 or 30 pages, in such language that everybody can read it, and that can be handed to everybody, and printed so cheaply that it would not cost so very much He would then send it to, first, all the members of the Section, and then tell them, "You can have as many copies as you want—50 or 100 for $1 or 50 cents," and he knows that a good many of them would be willing to contribute a little bit Then our Section will have enough to give it a starter, and he would be willing to donate whatever his means will permit to start the ball rolling, but let something be done. We talk and talk and talk about the necessity of in formation and educating the old and the young and the middle aged, now let us go to work and start and let us use some of that material we have already on hand and give it as wide a circulation as possible and begin to do some good and do a little less talking

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[*] The article of Dr Edgar in this Symposium on the Hygiene of the Family in Relation to the Productive Energy and Health of the Offspring appeared in The Journal last week.

Dr G Lloyd Magruder, Washington, D C, said he has been a physician to some colleges and has been thrown in close contact with students Those students were taught that they were to avoid the brothel and were to live an upright life, and they were restricted and especially warned against temptations He has received valuable information from West Point He was especially interested in this academy, having had a son there and having been on the board of visitors He watched the curriculum during the four years while his son was there Colonel Havard, the present acting surgeon general, wrote a brochure of a few pages and handed it to every cadet and every enlisted man on the reservation He laid stress on the dangers of gonorrhea and syphilis, he cited the various statistics that had prevailed in the German, the French and our own Army, he also laid stress on the fact that the same rule should prevail for the man as for the woman Having his son there who was intimately associated with the boys, he questioned him to know how they were affected by Colonel Havard's teachings That work produced a magnificent impression, and there is no finer set of men ever sent out from any school than from that place

For a number of years the question of a department of public health has been brought up before this Association, with the recommendation that there should be a department of public health, with a physician in charge, and that that physician should be a cabinet officer This has never succeeded, because there has been much opposition The committee of the American Association for the Advancement of Science had a special conference with President Roosevelt on the subject He gave the committee to understand that he did not want a department of public health, but that if they would advocate the use of the facilities that were now in force under the government and form a bureau of public health with greater power, under one of the departments, he would heartily endorse it

Dr G W Drake, Hollins, Va, said that the papers which have been read on the subject of prevention of conception should not be ignored He thinks that there is no greater evil which threatens us to day than the increasing habit of limiting the number of children in the families, voluntary limitation, in whatever way it is performed We ought to teach, as selfishness is a governing principle, it seems, of our lives, the deteriorating effect on the father, on the wife and on the husband When a resolution is passed appointing a committee to take up this subject, let the instruction in regard to this prevention of conception be included He thinks the time has come when a physician should remember that the word doctor, primarily, means teacher, and a doctor's advice is worth more than his medicine He should advise his patients, he should advise the community, he should teach on every proper occasion all the rules of health and all the preventives against disease, and he agrees with one of the speakers that a department should be in all of our colleges—male and female—a department of guidance, and in that department everything conducive to health should be taught nothing omitted He emphasized the importance of attention to the papers which have been read on the prevention of conception

Dr Prince A Morrow, New York City, said that the question of education is not being neglected by the American Society of Sanitary and Moral Prophylaxis This past week in New York City there were six lectures given to settlements and to organizations and to groups of the Y M C A organization, there are regular lectures given twice a week to girls in the settlements and to mothers' meetings In Chicago there are two lectures given each month to these mothers' meet gs with the idea of instructing mothers how to give early ducation or instruction in such matters to their children

So far as pamphlets are concerned, one of the pamphlets ssued by this society has had a circulation of over 10,000 thout ever appearing on any printed page It does not speak for the excellence of that particular pamphlet, it simply indicates the avidity on the part of the public for this kind of information—information that is sound and sanative and decent

He thinks that instead of these individual efforts, if efforts were simply united with these societies that have been organized in different states and organized for the specific purpose of instruction in the physiology and hygiene of sex, a vast deal of good would be accomplished

Dr W F Snow, Leland Stanford, Jr, University, California, said that among college students, as is true everywhere, there is great ignorance on these questions, combined with an overconsciousness of the moral side of venereal diseases In the college of which he spoke, experiments had been tried in giving separate lectures to the young men and to the young women on this subject The lectures were carefully planned and were given in registered university courses in personal hygiene by one of the instructors, but these particular lectures were given separately to the men and the women of the class, and he believes that certain harm and additional accentuation of self consciousness comes out of just such deference to the moral side of the question

As an experiment, Dr Snow began three years ago a course of lectures on infectious diseases, in which he took up tuberculosis, typhoid fever, etc, following with syphilis and gonorrhea, not with regard to the moral side of the subject at all, but simply as infectious, communicable diseases The classes in this particular institution are open to both the men and the women, and he gave these talks directly to the mixed classes, not attempting to emphasize in class anything outside of the fact that these diseases are communicable He found a very immediate and wholesome response on the part of the students The young men, for instance, do not laugh at such a course, they do not think that it is a subject to make fun of outside of the class room It seems to him to be a wholesome experience to drive these things home to them as epidemiologic facts in the presence of the young women of the university If these facts are brought before the public as they are brought before physicians, and prostitution is subordinated in the discussion simply to its place among the many other channels of infection, then the public will frankly discuss gonorrhea and syphilis, as they now do typhoid fever, recognizing without undue emphasis or embarrassment that personal contact is one of the very important modes of communication, but only one of the modes

Dr J Newton Hunsberger, Skippack, Pa, said that too little attention is paid to conditions as they really exist He did not for a moment wish to belittle the harm which a gonorrheal or syphilitic infection may do, but there are other conditions and other evils, of far greater importance, and which are a thousandfold greater factors in race suicide than these infections The specialist is prone to allow certain ideas to run away with him, especially if they are congenial ones No one can convince the general practitioner, and no reliable statistics can be produced, to prove that gonorrhea or syphilis are nearly so dangerous and destructive to life and health as they would have us believe And they certainly are not the great factors in race suicide

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Sir James Barr on Public Health —The annual congress of the British Royal Institute of Public Health was opened June 29, in London, England The meeting was made the occasion of a somewhat startling speech by Sir James Barr, the well known Liverpool physician In the course of his speech he said that if the money spent on the treatment of disease were diverted to the preservation of health, our large hospitals would not be half filled purveyors of synthetic remedies and artificial foods might find a suitable place in homes for the destitute, the necessity for surgeons and specialists would largely disappear, and physicians and general practitioners would be fully occupied in advising their clientele on the preservation of health It was possible, Dr Barr said, to have some process of artificial selection in the human race, and the nation which would produce the finest race would win in the long run If the state and parents would do their duty, he thought the decline in the birth rate would soon be arrested

A CLINICAL METHOD FOR DETERMINING THE ALKALINITY OF THE BLOOD *

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The desirability of a clinical method for determining the alkalinity of blood—that is to say, the OH and H ionization—has long been recognized The recent determinations of this ionization by Friedenthal,[1] Hober,[2] Fraenkel,[3] Farkas[4] and Tangl and his pupils[5] have shown that the alkalinity is very slight and subject to very little variation Accordingly a clinical method has seemed difficult to seek The recent study of indicators by Salm,[6] however, characterizing with the greatest accuracy a whole series of indicators, has suggested the possibility of devising a method at once certain, accurate and easy of application The present paper is concerned with experiments to this end

There are two general methods by which the reaction of a fluid may be quantitatively measured 1 Titration to an end point 2 Determination of the H and OH ionization The former yields information concerning the amount of base or of acid present in a solution, but no direct evidence concerning the nature of the equilibrium According to such a method, HCl and NaH_2PO_4 in equivalent amounts are equally acid The latter determination of the H and OH ionization yields no direct information regarding the absolute amounts of base and acid in solution, but gives us direct evidence concerning the intensity of alkalinity, that is, the condition of the equilibrium

All the methods so far described depend on titration There are two reasons for this 1 Investigations of the OH and H ionization of blood have hitherto been possible only with the aid of the concentration cell, involving difficult procedure and expert technic 2 The indicators which have been in use do not change color within the range of ionization found in blood Recently, however, Salm has carefully studied the exact point of H and OH ionization at which a number of indicators turn, and accordingly it has been possible to pick out from this list a certain number of these that give sharp color reactions at about the H ion concentration of the blood, in particular two, rosolic acid and neutral red

Rosolic acid is orange-yellow in the presence of acid and red in the presence of alkali There is an intermediate pink color at neutrality According to Salm, it is orange-yellow at $1\ 10^{-6}$n.H , pink at $1\ 10^{-7}$n H , and red at $1\ 10^{-8}$n H The changes are well marked and intermediate shades were easily distinguished The variations of H ionization of the blood lies between $0\ 1\times10^{-7}$ and 3×10^{-7} or less, a variation that falls within the bounds of neutrality as ordinarily conceived It will be seen, however, that this variation lies at about the middle of the color change of rosolic acid from yellow to red or, to be more exact, between the pink and the red, and it was to be expected that, if sensitive enough this variation would be noticeable in a difference in shade of the indicator In the present investigation rosolic acid was used The first examinations were made on rabbit's blood One c c of fresh rabbit's blood was caught in a centrifuge tube in which 10 drops of a 1 per cent solution of NaF had been placed and 10 c c normal salt solution added This was placed in the centrifuge for a few minutes, and the supernatant liquid then removed with a pipette to a clean test tube Two drops of a 0 1 per cent alcoholic rosolic acid solution were added and the pink color produced was compared with a standard The test was repeated with laked blood from which the proteids had been removed by coagulation by heat The same degree of color was obtained in this case as in the preceding experiment, that is, the reaction was neutral or slightly more than $1\times10^{-}$ The objections to the clinical application of this method are that a comparatively large quantity of blood is required, that a standard to compare it with must be at hand, and principally that the color of the blood itself interferes with the color reaction It was, therefore, determined to exclude, for the time being, the formed elements and to use the serum alone The test-tube method also seemed cumbersome for clinical work, so ash-free filter paper was prepared with the alcoholic solution of rosolic acid[7] The paper was soaked in the solution and then hung up in the air to dry While still moist, the paper was yellow, but on drying, which occurred rapidly, it became a delicate salmon pink The serum was obtained in the usual way from the finger or ear of the patient, by capillary tubes, which, after the blood had clotted, were placed in the centrifuge After the serum had separated, the tubes were opened with a file and a small drop of the serum removed by a capillary pipette and placed on the filter paper The normal serum produced a strongly marked red color which contrasted well with the unchanged parts of the paper

The serum in two cases of diabetic coma did not produce this change in color The same observation was made in the case of a patient suffering with acute meningitis, and at the time of examination, in a comatose condition The urine of this patient contained acetone, but no sugar At autopsy the case proved to be one of basillar meningitis The serum from a large number of cases of coma due to meningitis, without acetonuria, showed the normal alkaline reaction to rosolic acid

The serum from a case of acute jaundice showed the same reduction in alkalinity that was observed in the diabetic coma The serum in this case was yellower than normal and left a yellow stain on the paper quite distinct from the pale color of the diabetic reaction

The blood from a number of athletes was examined in a similar way to determine if a variation in the alkalinity of the blood could be shown to occur after extreme physical exertion For this purpose the blood was taken from members of the senior class crew immediately after a hard four-mile race, when all the crew were in a state of considerable exhaustion The reaction was normal No variation from the normal was observed also in the serum of a runner who had just completed a two-mile race and who was completely exhausted, fainting immediately after the blood had been obtained

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* Read in the Section on Pathology and Physiology of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City June, 1907

* From the Laboratories of Clinical Pathology and Biological Chemistry of the Harvard Medical School and the Boston City Hospital

[1] Friedenthal Ztschr für allgem Physiologie 1902 i, 56 1904 iv 44

[2] Höber Archiv für die gesammte Physiologie 1900 lxxxi 522 1903 xcix 572. Also Hofmeister s Beiträge 1903 iii 525

[3] Fränkel Archiv für die gesammte Physiologie 1903 xcvi 601

[4] Farkas Archiv für die gesammte Physiologie 1903 xcviii 551

[5] Other articles on the subject which may be consulted are Benedict H Archiv für die gesammte Physiologie 1906 cxv 106 117 Szili Alex ibid pp 72 and 82

[6] Salm Eduard Ztschr für physikalische Chemie 1906 lvii 471

[7] The rosolic acid paper mentioned above may be obtained from Dr R L Emerson 730 Boylston St. Boston

The involution of a chancre is brought about by fatty degeneration. the compression and narrowing of the vessels leading to disturbances in nutrition and retrograde changes Ehrmann is of the opinion that spontaneous healing takes place by phagocytosis

When it comes to secondary manifestations of the disease, as a rule, all doubt is removed and a histologic examination as an aid to diagnosis does not come into question, excepting, perhaps, in certain drug eruptions, as bromid and iodid, which may simulate very closely certain ulcerative and fungating syphilitic lesions A case of this sort recently came under my observation, where fungating lesions were present about the face and genitals of a young woman along with a general rash, which were distinguished with great difficulty from a possible specific infection Fungating growths of the vulva resembling flat condylomata were examined very carefully for spirochætæ with negative result

The evolution and histology of the roseola and papule seem to show that these lesions are embolic rather than toxic A possible explanation of the development of circinate and gyrate lesions by the involvement of a terminal vascular cone has been suggested

In the roseola Hoffmann[1] found spirochætæ in the dilated end capillaries of the papillæ, and the long interval which elapses between their entrance in the body and the appearance of the efflorescence suggested that the organisms give off few toxins, which only after a longer period are capable of producing a deleterious effect Or, according to Thalmann, an endotoxin liberated on destruction of the body may be causative

Histologically, a macular lesion presents a mild reaction The epidermis may be unchanged or flattened out with loss of the ridge system In the upper corium the vessels were moderately dilated, filled with blood and ensheathed by a slight infiltration of round cells The endothelium was swollen, and round and spindle cells were seen in the adventitia of the larger vessels The cutaneous appendages were normal and surrounded by a few lymphocytes

The small miliary papule, lichen syphiliticus (Fig 3), is a follicular process extending from the epidermis into the cutis below the hair papilla The infiltrate was located about the hair follicle, which remained intact and sent outgrowths into the surrounding nodule, which nodule was composed of a reticular structure holding new-formed blood vessels, round, plasma and connective tissue cells in its meshes Most of the vessels inside of the nodular area were obliterated, but at the periphery they were filled with blood A number of the superficial ones were thrombosed and appeared like giant cells Away from the perifollicular disposition the vessel walls were thickened somewhat and mantled by round and plasma cells The coil glands were frequently the seat of a marked fatty degeneration and surrounded by an effusion of round and plasma cells The erector pili muscles were likewise infiltrated The epidermis was slightly edematous and thinned There was present sometimes a pustule, produced by the instability of the tissue matrix and liquefaction of the syphilitic infiltrate

In the large papular syphilide there were present in the epidermis parakeratosis, acanthosis and edema, with a marked invasion of polynuclear leucocytes Epithelial mitoses were rather frequent The cellular infiltration in the early stages (Fig 4) of the lesion was limited to the vessels in the upper part of the corium, and the papule was produced chiefly by the epithelial hyperplasia, but later it was more diffuse and surrounded all the vessels of the deep and superficial plexuses Most of them had thickened walls and consequent diminution of their caliber, but here and there a few remained dilated and showed little if any change Some were partially thrombosed Not infrequently immediately about some of the vessels and coil glands there occurred a degeneration of the connective tissue, reducing it to a fibrillary network which took the basic stain faintly and was probably toxic in origin The cellular exudate was composed of round cells with a few plasma cells scattered between them There was also hyperplasia of the fibroblasts The pustulation which occurs in the large papule represents in a major degree the central involution which takes place

The rupial syphilide showed a very marked parakeratosis with leucocytic infiltration of the entire horny layer and here and there an aggregation of cells, coagulated serum and detritus entering into the crust formation The overgrowth of the rete was irregular, many of the pegs being narrow and pointed, others widened and bulging into the cutis It was edematous, in places necrotic, and lymphocytes were so numerous in it that many of the epithelial cells were completely hidden

The cellular effusion in the corium was quite superficial, being almost limited to the papillary and immediately subjacent layer, except where it followed along the course of a hair follicle or mantled a few of the deeper vessels and coil glands In the papillæ blood and lymph capillaries were markedly dilated, some containing a homogeneous substance Where the inflammatory reaction was most intense the vessels were narrowed, the larger and deeper ones showing more of an adventitial proliferation The fibroblasts were increased in number, no giant cells were present A mucinous degeneration appeared about the coil glands and some of the vessels

In the nodular or tubercular syphilide the entire cutis from the epidermis to the subcutaneous fat tissue was involved, under a low power showing alternating light and dark areas, the former representing the altered blood vessels and the latter a cellular effusion Under the high power the infiltration was composed of plasma and giant cells, lymphocytes and hyperplastic fibroblasts The vessels, increased in number, showed the effects of an obliterating endarteritis (Figs 5 and 6), their former site being marked by solid cords, groups of irregularly-disposed cells with pale staining nuclei and giant cells with peripheral or central nuclei or both Near the edge of the section were a few vessels with narrowed lumina and a hyperplasia of all their coats A number of the lymph spaces were thrombosed The few remaining bundles of connective tissue had here and there a vacuolated appearance, the result probably of a fatty degeneration and beginning regression The epidermis was flattened out into a very thin band

The gumma (Fig 7) compromises the derma throughout its entire extent with marked vascular changes, a diffuse infiltration and necrotic foci Viewed with the low power, there was apparently a decrease in the number of blood vessels, but on careful examination it was found that many were obliterated or had their caliber reduced and their walls thickened The infiltration consisted of lymphocytes plasma cells and a large number of hyperplastic fibroblasts One or more areas of caseation were observed and about them fragmented nuclei When intact the epidermis usually presented no changes beyond a reduction in thickness

From the foregoing descriptions it will be seen that the differences existing between the various specific lesions are of degree rather than kind With the exception of the macular syphilide, all consist of a dense infiltration of the same kind of cells, as a rule the lymphocyte being the most common However in some specimens lymphocytes in others plasma cells predominate, but not with sufficient constancy to accept their presence, numerically, as of pathognomonic value The exudate begins in the papillary layer about the superficial plexus, from thence involving the deeper tissue

Changes in the collagenous tissue, except as it is replaced by granulation tissue, are not regular and are often so slight that they are not worthy of comment In viewing a series of lesions from a given number of cases I found that ordinarily the changes were not sufficiently well marked to be of any practical diagnostic aid Nevertheless, both hypertrophy and atrophy of the connective tissue, as a result of vessel changes, do occur An instance of the latter was reported by me in a case of symmetrical cutaneous atrophy with the coincident development of syphilis of the skin and nervous system,[5] the alterations in the vessels' walls (Fig 8) and the perivascular infiltration pointing strongly to these structures as the primary seat of the trouble Or a productive interstitial inflammation may be secondary, which is illustrated in the accompanying photomicrograph (Fig 9) of a syphilitic laryngitis, the larynx having been extirpated under the mistaken diagnosis of a malignant growth

It is not uncommon to find an epithelioma developing on a syphiloma (Fig 10), especially about the oral cavity The epithelial hyperplasia is probably brought about by irritation, increased hyperemia, as well as by changes in the underlying connective tissue permitting an epithelial downgrowth

Coming to the vascular system, in all the lesions except the macule the reaction is marked, being of greatest severity in the late secondary and tertiary stages of the disease and showing all grades from swelling of the endothelium to proliferation of all the coats and obliteration of the lumen It is very likely that there are two processes, one taking its origin in the adventitia and the other in the intima, possibly simultaneously, or, as investigations on the cerebral arteries suggest, independently of each other

Hansemann[6] is of the opinion that the syphilitic virus has a special predilection for the endothelial cells, whether of the endocardium, large or small arteries, veins or lymphatics, all the rest may be involved secondarily To the vascular changes may be attributed the formation of giant cells so frequently encountered in the nodular and tubercular syphilide and in some of the early secondary papules It is rare to find them in gummata, and it has not been my experience to find them in initial lesions although Unna and Rieder claim to have done so They appear to be a more constant feature of the tubercular and serpiginous lesions, in which they are often present in groups In many instances it is simple enough to trace their formation to proliferated endothelium and thrombosed lumina. In others it is much more difficult to establish such a relationship, but if sections in series are studied it is demonstrable The type most frequently met with is the Langhans with peripheral nuclei, the myeloid with central nuclei occasionally In one case a double row of nuclei appeared whose formation it was difficult to explain

Giant cells of specific lesions differ from those found in lupus in being less completely formed, in showing in many instances only a partial thrombosis and in their irregular nuclear multiplication, suggesting that the process is a more acute one As they are more numerous in serpiginous than other lesions, it has occurred to me that the extension of those lesions could be explained by the progressive thrombosis of the vessels Many specimens support this idea, but especially one from a serpiginous lesion of the thigh (Fig 11) in which the histologic findings consisted of foci of groups of thrombosed vessels with a moderate cellular effusion

While apparently true of cutaneous syphilis it is not intended to impute to metamorphosed vessels the origin of giant cells in all specific processes Verse[7] found in arteritis syphilitica cerebralis giant cells in all layers of the vessel wall in one of his cases, but especially in the intima where they flanked the entrance to an aneurism and had an enormous number of nuclei In other cases they were found in the necrotic media He believed that many of them were foreign body giant cells v Baumgarten[8] has expressed the belief that the presence of giant cells in syphilitic processes indicated a combination of tuberculosis and syphilis, but in none of the cases that came under my observation was tuberculosis demonstrable anywhere

The syphilitic products show a greater instability in some lesions than in others, as in the pustular, rupial and gummatous In the two former, perhaps, the question of soil is the more significant, while in the latter the severe vessel alterations interfering with nutrition offer an explanation The involution of the efflorescences is brought about by necrobiosis, fatty metamorphosis and caseation.

Recurrences in pre-spirochæta days were explained by Neumann[3] as due to the proliferation of cells which remained at the site of the original lesion Now, however, the multiplication of remaining spirochætæ is invoked as the cause by Neisser [9]

An important aid in the clinical diagnosis of syphilitic skin lesions is often rendered by the observation of the so-called pigmentary syphilide of the neck, which is occasionally seen either as a primary condition or as a sequel to a pre-existing erythematous or papular eruption It occurs more often in brunettes and is an important corroborative evidence of syphilis after other manifestations of the disease have disappeared Pigmentation in syphilis is favored by a cachectic condition of the individual and also by the presence of an old nephritis In my service at the City Hospital it is not infrequent to see a syphilitic infection in a patient with an antecedent nephritis, in whom the development of pigmentation is a common occurrence and often very marked

Recently Hoffmann[1] has ascribed to the spirochætæ a rôle in the diminution and increase of pigment in specific lesions He found that in the areas invaded by the organisms the pigment in the epidermis was entirely lacking or very much reduced in amount This depigmentation he considers the result of a local action—the body toxins—of the spirochætæ The deeper marginal pigmentation surrounding spots of leucoderma is probably brought about by their peripheral progression, which occasions at first an increase and later by intensity of action a disappearance of pigment The diffuse bronzing of the skin, seen especially about the neck, he believes to be due to the action of the spirochætæ on the suprarenals, for which they appear to have a special predilection

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[5] Jour of Cutan. Dis April 1904 xxii 255
[6] Trans. V Internat. Derm. Kongress Berlin, 1904, p 205

[7] Ziegler's Beitr 1907 xl 409
[8] Verhandl der Deutsch Patholog Gesell iii
[9] Die experimentalle Syphilisforschung nach ihrem gegenwärtigen Stande, monograph, 1906.

The conditions from which syphilis is to be differentiated are tuberculosis, lichen scrofulosorum, blastomycosis, leprosy, epithelioma and drug eruptions It often requires the minutest examination to draw a distinction between specific lesions and lupus, as exemplified in several specimens in my collection, notably a syphilide from the flush area of the face (Fig 12) and another from the back of the finger The latter had been diagnosed clinically as a lupus The following points may serve as a guide In syphilis there is a greater degree of proliferating endarteritis and other vascular changes, many of the giant cells are incomplete and can be traced to the vessels, and progressive and retrogressive changes are more rapid than in lupus

The small follicular lesion presents a picture so closely resembling that of lichen scrofulosorum that it can scarcely be differentiated from it microscopically, and we are obliged to take into consideration the clinical features, as the age of the patient, the presence of concomitant symptoms of syphilis and the absence of scrofulosis

In blastomycosis and leprosy it is such a simple matter to demonstrate their respective organisms in the tissue that the histologic changes are of secondary importance Epithelioma is readily excluded by the presence of an epithelial growth in the corium

The most frequent drug eruption that comes into question is the bromid, the lesions of which present epithelial hyperplasia with miliary abscesses and a diffuse infiltration of round and polynuclear cells, often with eosinophiles through the derma Giant cells and vascular sclerosis are lacking

All clinicians have observed that certain specific lesions yield to treatment with great facility, while others are obstinate in their response to therapeutic measures It does not seem possible from ordinary histologic examinations to offer any explanations or draw any conclusions as to why this is the case It may be that in one the spirochætæ are more malignant and in another the resisting power of the patient lowered On the other hand, the reason may be sought on anatomic grounds, the implication of certain structures, as the vascular apparatus, for instance, where proliferation may interfere with the permeability and absorption of the therapeutic agent However, these are simply hypothetical questions for which as yet no satisfactory solution is offered

DISCUSSION

Dr A Ravogli, Cincinnati, said that, although the alterations in the blood vessels produced by syphilis have been well recognized, it is difficult to understand how they are affected in that way We do not know whether the blood, carrying the spirochætæ, affects first the intima or the adventitia He has come to the conclusion that the adventia is first affected and then the intima, probably not from the spirochætæ in the blood current, but from the spirochætæ carried to the tunics from the lymph vessels He has been fortunate enough to secure one very fine specimen showing two spirochætæ just inside the adventitia surrounding the vessels He was unable to photograph these small micro organisms The examination of the specimens of syphilitic tissues all show the tendency of the tissues to hyperemia and proliferation, the same as is found in leprosy and tuberculosis He believes this peculiar proliferation to be the result of irritation produced by the presence of the spirochætæ in the connective tissue

Dr W H Mook, St Louis, emphasized the difficulty of distinguishing between tuberculosis and the tertiary lesions of syphilis He had in mind the two cases under Dr M F Engman's and his own care of the frambesial form of syphilis, in which the diagnosis of tuberculosis verrucosa cutis or syphilis could be made Sections showed typical plasma and giant cells, and it was only after two months of anti syphilitic treatment that the diagnosis of syphilis was decided on Dr Mook said that the differential diagnosis by histologic methods is sometimes very difficult in these cases, especially where there is any complicating infection

Dr W G Gottheil, New York City, said that he had seen very few photomicrographs equal to those illustrating Dr Fordyce's paper The usual picture of a syphilitic lesion bears such a close resemblance to so many other things he said, that work of this kind, which gives us some definite data for the recognition of syphilitic lesions, is especially valuable

Dr M B Hartzell, Philadelphia, said that the difficulty in making a microscopic diagnosis between the lesions of tuberculosis and syphilis and some other infections is not to be wondered at when we recall that all these lesions are probably due to the presence of toxins in the blood We formerly supposed that they were due to the direct presence of the micro organism which is the cause of the disease, but we now know that the active agent in the production of most of the tissue changes is some toxin circulating in the vessels, and in consequence of this, the most striking changes are such as occur in the vessels themselves

Dr Charles A Kinch, New York City, said that we should look to the lymphatic system for the tissue changes produced by syphilis rather than to the blood vessels The changes in the blood vessels are secondary to those in the lymphatic circulation

Dr John A Fordyce, New York City, said, in reply to a question by Dr Schamberg, that to some of the types of giant cells in syphilis it is difficult to assign any origin In other cases it is very easy to trace their development to obliterative changes in the vessels The usual type seen in late syphilis is the Langhans giant cell, the peripheral nuclei of which are the proliferated endothelial cells of the smaller vessels, he has, however, encountered the myeloid cell in sections which could also be assigned to a vascular origin He interpreted these nuclei as leucocytes entangled in a thrombus formation or endothelial cells which, through rapid proliferation, had lost their normal relations In regard to the primary involvement of the blood or lymphatic vessels, to which Drs Ravogli and Kinch referred, Dr Fordyce said that in the early stages of syphilis, it is probably the lymphatic and in the later stages the larger blood vessels in which the chief changes take place

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Cream Puff Poisoning in Buffalo —There have been many cases of ptomain poisoning in Buffalo from eating cream puffs and chocolate éclaires said to have been obtained from Foxon's bakery Dr Andre Le Coq, a chemist of Paris, France, who investigated many cases of poisoning from cream puffs and éclaires in Paris last summer, stated that the toxic action is always the fault of the eggs, never of mineral poison introduced accidentally, nor of the other ingredients of the cream In a report to Mr Faxon, Dr Le Coq states "The white plays a more important part than the yolk and it is generally at fault when the poisoning is due to fresh eggs, since it is commonly beaten up raw, while the yolk is sterilized by cooking The microbes in it find in the sugar, milk and gelatin of the custard an extremely favorable culture medium The yolk does its work when the poisoning is due to decomposed eggs, for cooking can not destroy the toxins and ptomains of putrefaction Chemical analysis shows the presence, in the poisonous cakes or in the bodies of the victims, of alkaloidal substances not identifiable with any hitherto known, but as these analyses have been made after a considerable lapse of time, it can not be positively affirmed that these toxins are not simply due to putrefaction" It is safe to conclude that, in hot weather, éclaires, cream puffs and the like should be eaten within twenty four hours after they are made An investigation is being made by the department of health

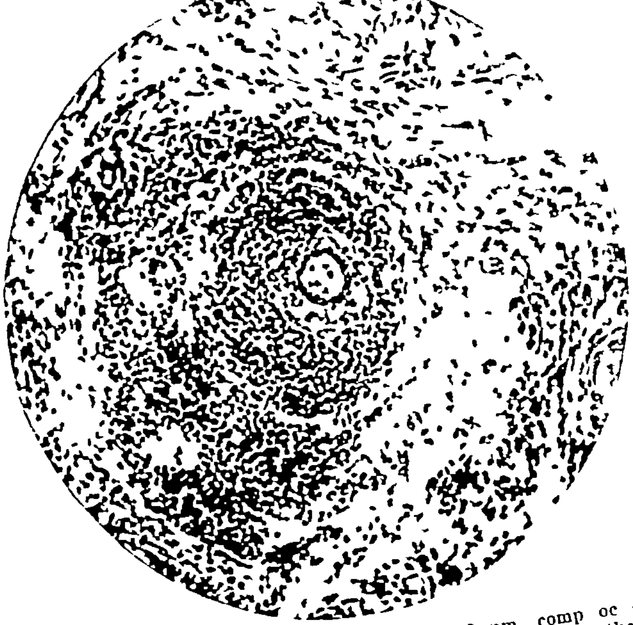

Figure 1

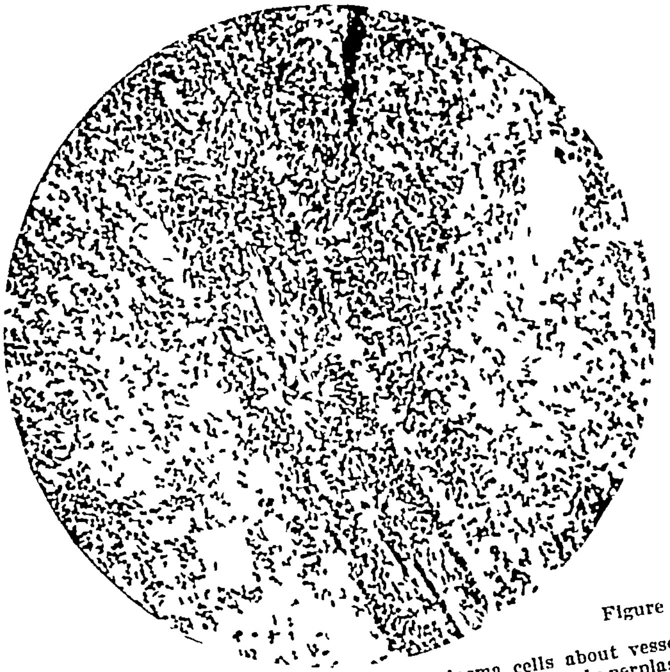

Figure 2

Fig 1.—Chancre of the penis (Zeiss 8 mm comp oc 4) An early lesion with mantle of round and plasma cells about vessels The latter are increased in number and show an endothelial proliferation The intervening connective tissue contains hyperplastic fibroblasts and a few plasma cells and lymphocytes

Fig 2.—Chancre of the penis (Zeiss 8 mm comp oc 4) An older lesion still showing the ensheathing of the capillaries with lymphocytes and plasma cells but with the infiltration more diffusely distributed through the remaining tissue All the vessels have a proliferated lining In the center is seen a longitudinal section of a capillary

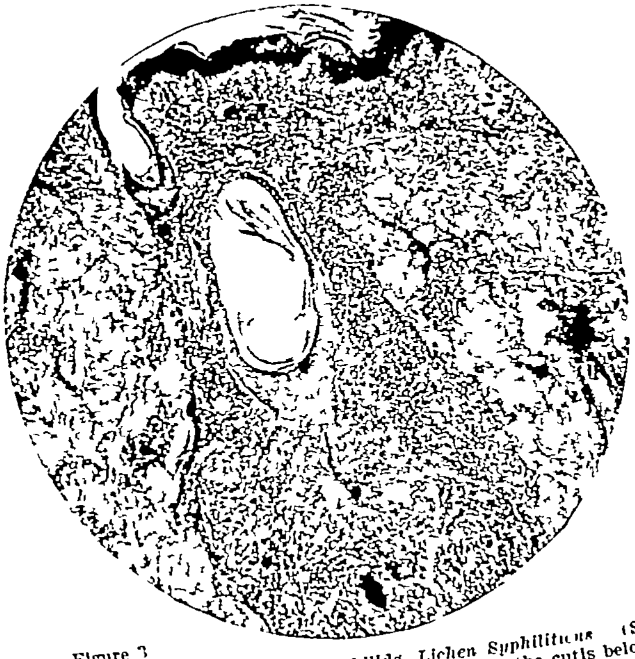

Figure 3

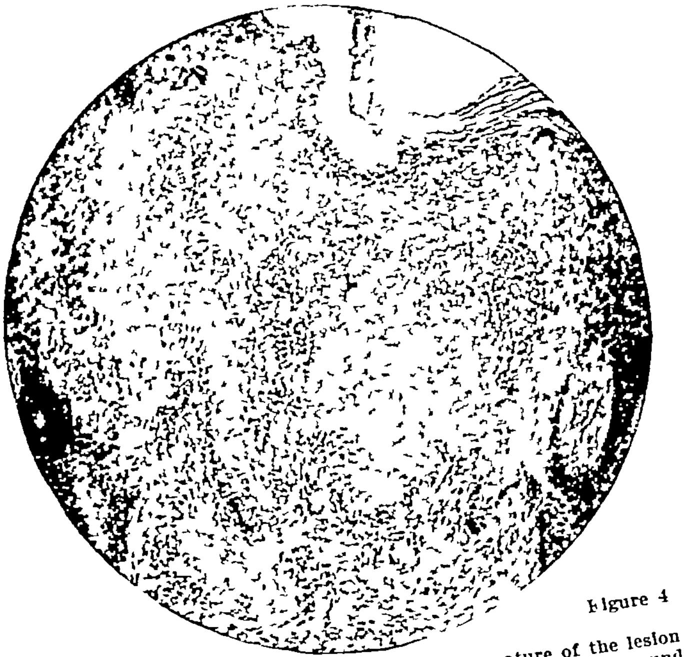

Figure 4

Fig 3.—Small papular syphilide *Lichen Syphiliticus* (Spencer 1 in comp oc 4) Illustrating the follicular nature of the lesion The process extends along the hair follicle into the cutis below the hair papilla and consists of a reticular structure with round plasma and connective tissue cells in its meshes Inside the area many of the vessels are completely obliterated others are thrombosed and simulate giant cells At the periphery of the infiltration a few engorged vessels are present Away from the perifollicular part the vessels are thickened and sheathed by a few round and plasma cells The coil glands are surrounded by the same cellular elements and are the seat of a marked fatty degeneration Two outgrowths from the affected hair follicle penetrate the active process. The epidermis presents no noteworthy changes

Fig 4.—Papular syphilide. (Spencer ¼ in. Zeiss comp oc. 4) A lenticular papule removed in the early stage of the disease, showing acanthosis of the epidermis with dense infiltration of leucocytes and necrosis of the upper layers In the papillary bodies there is slight sheathing of the vessels with round and plasma cells. The lesion is produced chiefly by epidermic hyperplasia.

ILLUSTRATING ARTICLE OF DR. FORDYCE

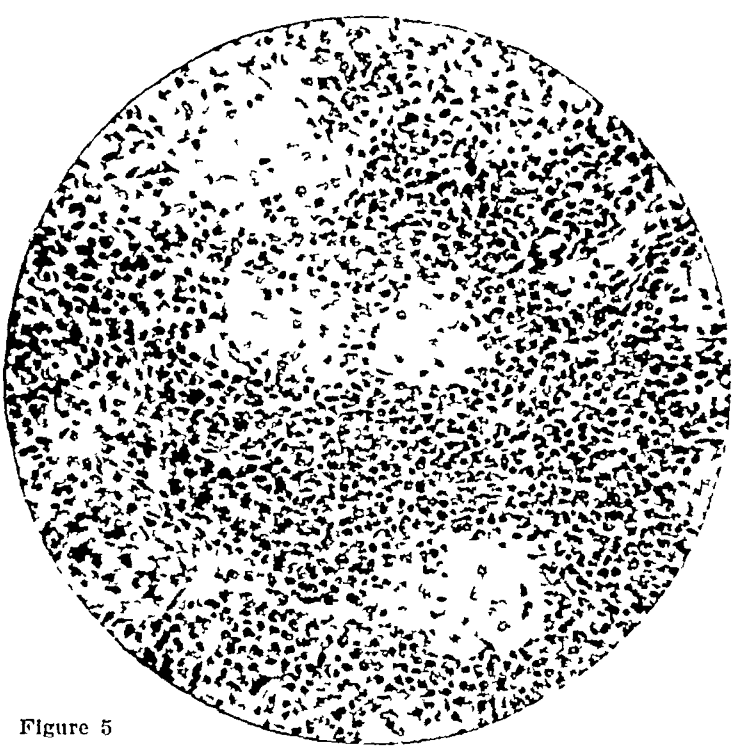

Figure 5

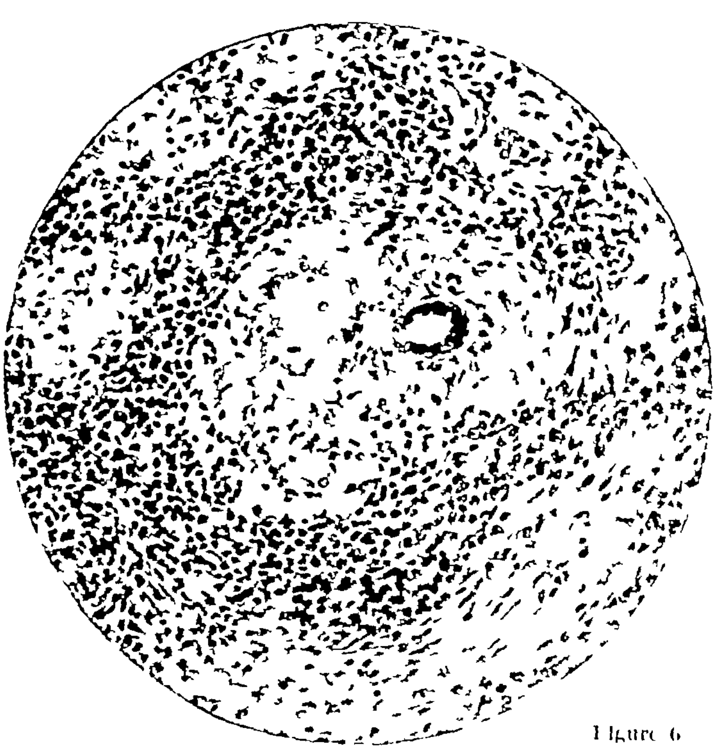

Figure 6

Fig 5—Tubercular syphilide of the face (Spencer ¼ in Zeiss comp oc 4) Showing obliteration due to endothelial proliferation and mantling of the transformed vessels by round and plasma cells

Fig 6—Tubercular syphilide (Zeiss ¼ in, comp oc 4) A section showing obliterated and thrombosed vessels with a peri vascular infiltration of round and plasma cells A number of the vessels show simply an endothelial proliferation The one in the center is, in addition, thrombosed and simulates a giant cell

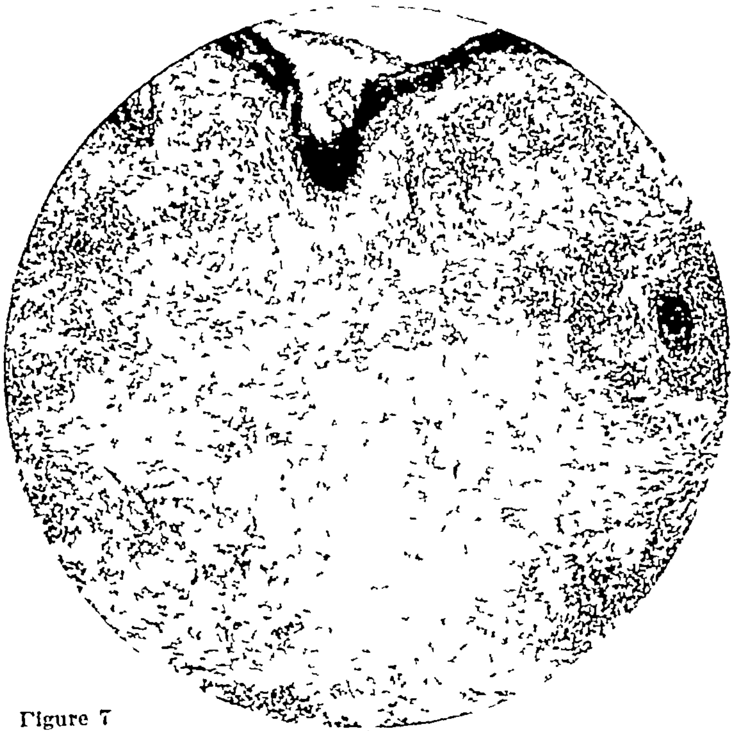

Figure 7

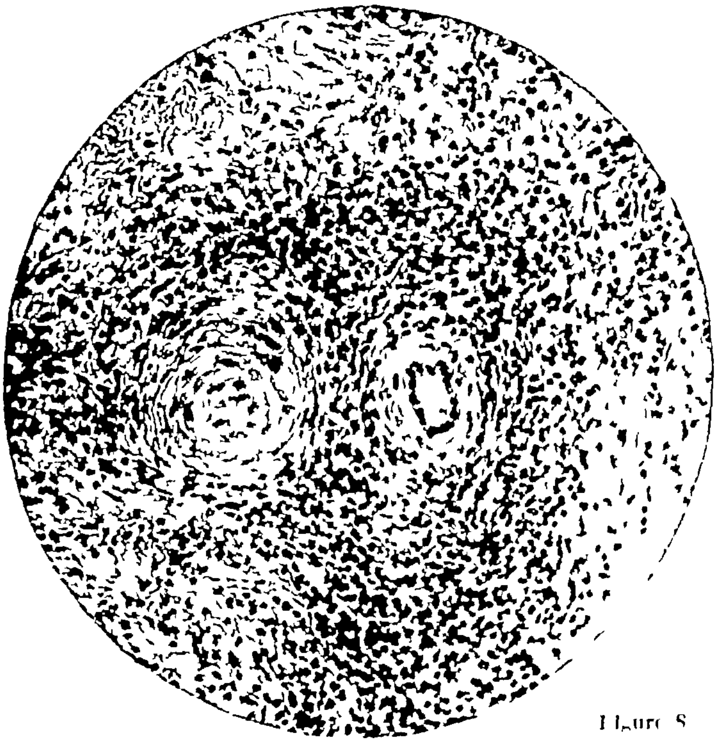

Figure 8

Fig 7—Miliary gumma of the skin (Spencer 1 in comp oc 4) The cutis is uniformly infiltrated with round plasma and proliferated connective tissue cells and here and there shows areas of caseation One is seen in the illustration in the middle third of the corium just to the right of the median line The vessels have their caliber reduced in size or are entirely obliterated The epidermis is thinned and its pegs are flattened out

Fig 8—Symmetrical atrophy of the skin with syphilis (Spencer ¼ in Zeiss projection oc 2) Cross sections of an artery and a vein The former shows a proliferation of its intima and adventitia with narrowing of the lumen the latter is completely occluded by intimal proliferation Surrounding them is an infiltration of round and plasma cells

ILLUSTRATING ARTICLE OF DR FORDYCE

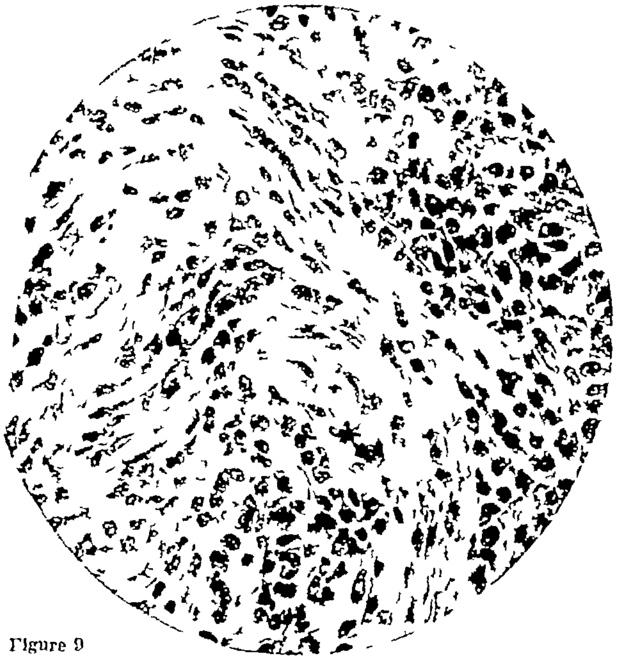

Figure 9

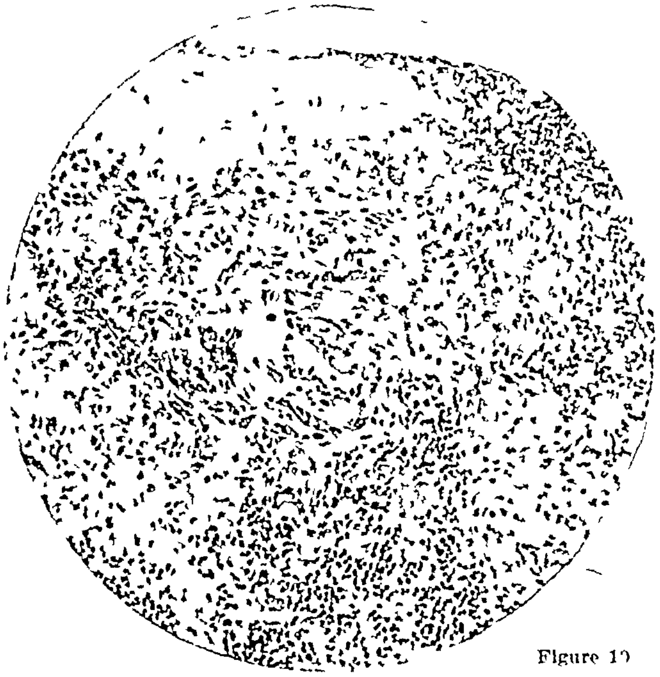

Figure 10

Fig 9—Syphilitic laryngitis (Spencer ¼ in comp oc 4) A productive inflammation of the larynx showing hyperplasia of the connective tissue and an inflammatory infiltration of round cells and large numbers of plasma cells The vessels are the seat of an endarteritis or panarteritis

Fig 10—Epithelioma developing on a syphiloma of the lip (Zeiss 8 mm comp oc 4) One portion of the lesion shows an ulceration extending to muscle of the lip It is the seat of an intense infiltration of lymphocytes through which are scattered some plasma and many polynuclear cells There is a marked increase in the blood vessels and some hemorrhage is present A number of the vessels are dilated and filled with blood their walls presenting no perceptible change Others are simply thrombosed or again their walls are thickened and the lumina occluded by proliferated endothelium Several giant cells with peripheral nuclei are traceable to vascular changes At the edge of the lesion are seen fine processes of proliferating epithelium penetrating the derma

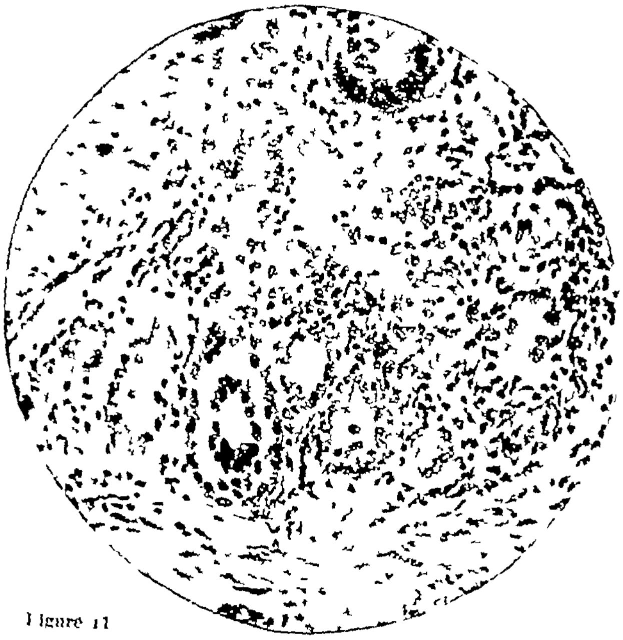

Figure 11

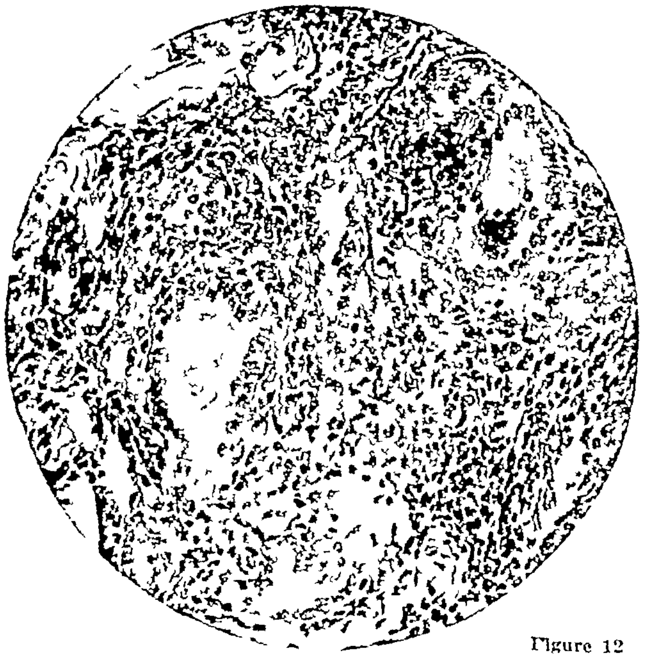

Figure 12

Fig 11—Serpiginous syphilide of the thigh (Spencer ¼ projection oc 2) A group of vessels giving rise to giant cells one of which shows very distinctly the double row of nuclei The surrounding infiltration is composed of round plasma and connective tissue cells.

Fig 12—Late syphilide of the nose simulating hypertrophic lupus (Spencer ¼ in projection oc 2) A section through an area containing *a group of capillaries* which have been completely obliterated and present the appearance of giant cells The connective tissue is increased in volume and pervaded by fibroblasts round cells and plasma cells.

ILLUSTRATING ARTICLE OF DR FORDYCE.

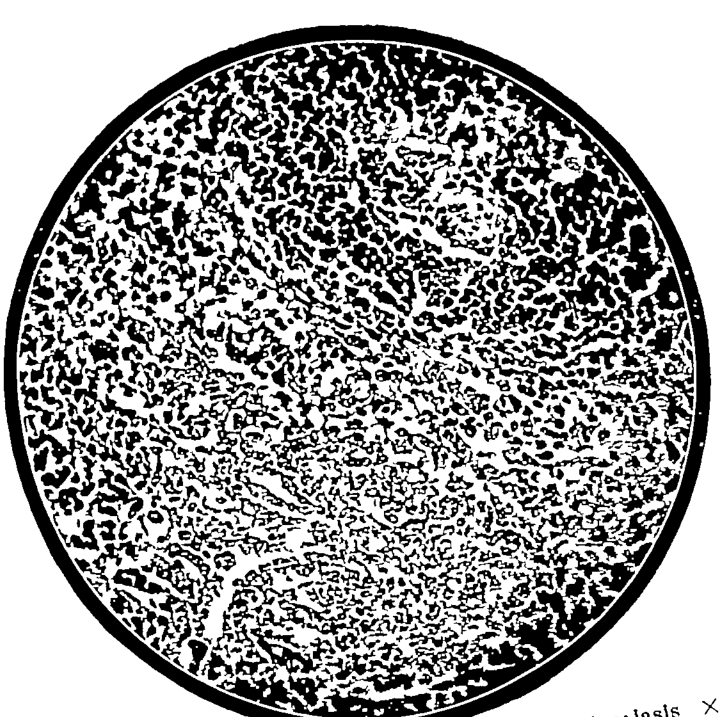

Figure 1

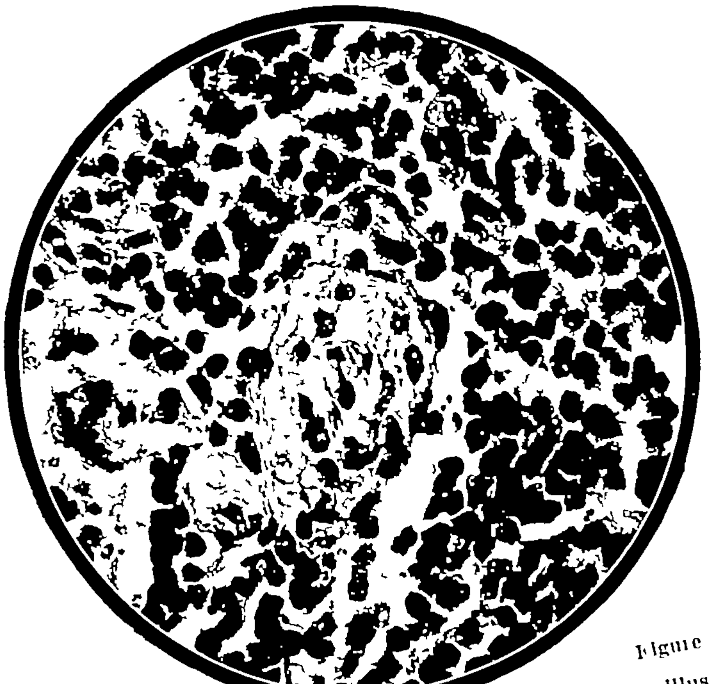

Figure 2

Fig 1—Photomicrograph of spleen in uncinariasis × 200 By Dr W M Gray All the sections from which these four illustrations were made were from the organs of two individuals dying of very extreme and uncomplicated uncinariasis chronic type IIb of one case of 10 per cent The sections are from 4 to 5 micra in thickness The specimens were hardened in Zenker s fluid

Fig 2—Photomicrograph of spleen in uncinariasis × 500, same specimen as in Figure 1 Showing central artery, Malpighian corpuscle and hyaline degeneration By Dr W M Gray

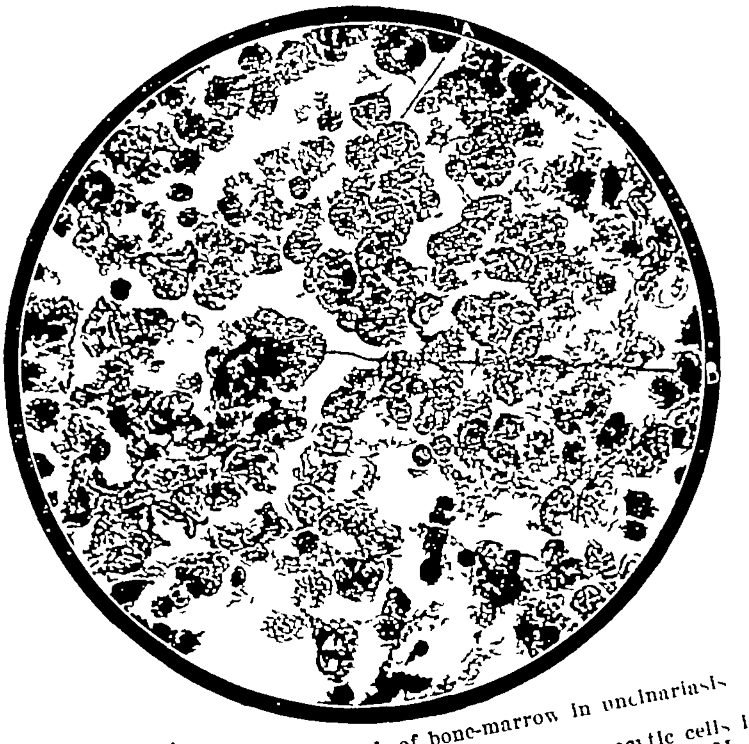

Figure 3

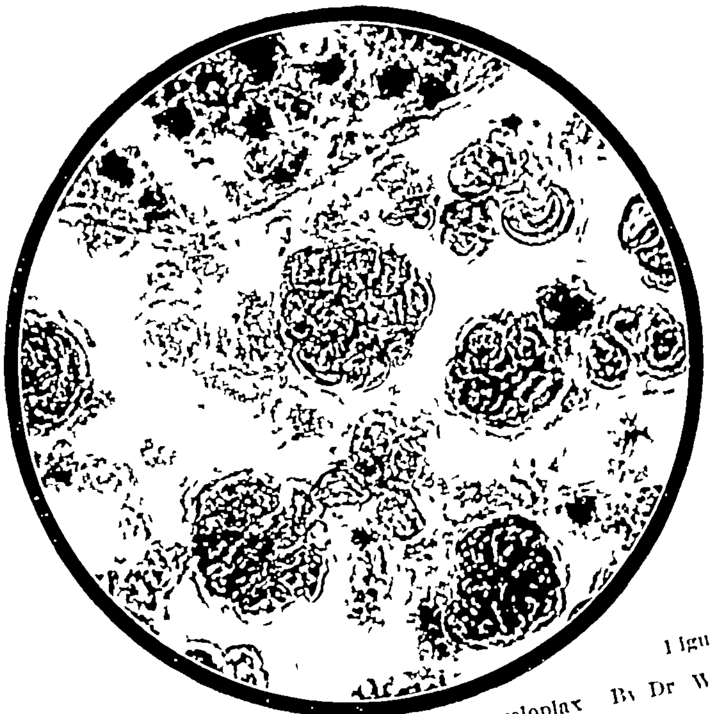

Figure 4

Fig 3—Photomicrograph of bone-marrow in uncinariasis × 750 A group of eosinophilic myelocytes B myeloplax By Dr W M Gray

Fig 4—Photomicrograph showing large phagocytic cells in blood channel of a hemolymph gland in uncinariasis These cells have engulfed great numbers of red cells, × 750 By Dr W M Gray

ILLUSTRATING ARTICLE OF DRS ASHFORD AND KING

UNCINARIASIS, ITS DEVELOPMENT, COURSE AND TREATMENT *

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AND

WALTER W KING, M.D

Captain, Assistant Surgeon U S Army, and Passed Assistant Surgeon U S Public Health and Marine Hospital Service,
respectively, Honorary members Porto Rico
Anemia Commisson
WASHINGTON, D C

In this paper we purpose to confine our attention to the disease uncinariasis, inasmuch as a detailed description of the methods of the Porto Rico Anemia Commission in combating the present epidemic in Porto Rico has been made the subject of other papers written by us Suffice it to say that, at the beginning of its operations, the commission found itself confronted by an epidemic affecting about ninety per cent of the rural population of the island, with an average of 20 per cent to 25 per cent. of the total death rate for some years previous to the year 1905 (*Health Reports of Porto Rico*, deaths from anemia, 1898-1904, inclusive)

Our experience extends over the period 1899-1906, in the last two years of which the commission treated about 30,000 persons, fully 12 000 of whom came under our personal care and attention Dr Pedro Gutierrez, of Porto Rico, the other member of the commission, shared with us the difficulties of that work and took an active part in conclusions drawn from it He is now chairman of the present commission, which has already treated, since June, 1906, about 85,000 patients

UNCINARIAL DERMATITIS

We believe the skin route to be the only efficient mode of invasion of *Necator americanus* in producing uncinariasis, as infections by the mouth are not only rare, but, if thus consummated, the larvæ are so few in number as to be an insignificant factor in producing symptoms That larvæ may be introduced into the digestive canal by the mouth and become parasitic therein seems to have been proved Ninety-six per cent of our patients acknowledge having had "mazamorra" or ground itch, a lesion abundantly shown to be due to invasion of the healthy skin by these larvæ, and the well-shod were practically never infected, though living in the midst of this tremendous epidemic. We feel justified, therefore, in considering that the remarkable claim of Loos, Claude Smith and others, has been established on a sufficiently extensive scale as the usual mode of invasion, in Porto Rico, at least

Contact of the skin with mud laden with encysted larvæ for a time not necessarily longer than from a few minutes to half an hour, causes first itching, then redness and swelling of the part, with the formation in a couple of days of papules, rapidly becoming vesicles In favorable cases pustulation does not occur, but when the invasion of many larvæ has profoundly inflamed the part and the ordinary organisms of pus have gained a foothold, not only do pustules form, but extensive ulceration may result which is extremely resistant to treatment. In the case of an American officer, the severity of these ulcers caused his invaliding to a military hospital in the United States, the manner of his infection having been from mud which during a "hike" had oozed between the top of the shoe and the legging

Extensive ulceration and the scars left by it on the lower third of the leg were very frequent among our patients Such ulcers were those dubbed "tropical" by the uninitiated, "syphilitic" by those whose knowledge of the country people of Porto Rico was not extensive

Generally, in milder invasions the dermatitis subsides in a week or two We believe that skin infection can take place without manifest dermatitis, judging from a number of cases in which mouth infection seems to have been improbable In fact, we accomplished, by the skin route, an infection of a guinea-pig which was so severe as to cause its death in three and a half days, although the outward signs of ground itch never appeared

It is of paramount importance to distinguish between the laboratory diagnosis of uncinariasis and the clinical picture of the disease The presence of ova of this parasite in the feces is not evidence of the clinical entity now to be described, even ova in large numbers True it is, that feces heavily laden with eggs are liable to pertain to an anemic individual, but this is not always so, as we have repeatedly seen great immunity enjoyed by some whites, and especially notable racial immunity of the negro to the effects of infection Beyond a certain point, and in conditions of reduced vitality from lack of food or the presence of other diseases, this relative immunity may be, and often is, lost The same immunity we have noted in the negro is said to be enjoyed by Asiatics As a rule, however, heavy infections cause uncinariasis Usually these infections are multiple and cumulative in their effects on the host, and the anemia and other symptoms come on gradually At times severe single infections cause an acute form of the disease All depends on the relative number of larvæ in the infected earth, a factor dependent on density of a population which practices earth pollution, and the exposure of the skin to invasion in tropical countries chiefly through bare feet. It is of little practical importance to attempt the determination of the minimum average number of uncinariæ that will produce symptoms, but generally the greater the number harbored by an individual, the more abrupt will be the onset, the more pronounced the symptoms, and the more rapid the course of the disease Thus we may speak of acute and chronic, mild and severe cases, with every gradation from one to the other, also of a chronic case becoming acute when additional infections take place This latter occurrence is frequent in places like Porto Rico, where opportunities for constant infection abound

SYMPTOMS, COURSE AND USUAL COMPLICATIONS

Uncinariasis presents a most varied symptomatology and a full discussion of it can not be included here We shall omit mention of symptoms of minor importance and interest. A month or so after one or more such infections the subjects become languid and mentally inactive Indefinite, fugitive pains in the epigastrium annoy them and tenderness in the right hypochondrium may generally be elicited Pain in the sternum and chest are commonly complained of and slight breathlessness after exertion and occasional palpitation of the heart are noticed A febrile movement of from 37 5 C to 38 5 C (99 5 F to 103 3 F) is not uncommon, but it is apt to be overlooked The preliminary symptoms are obscure and the patient sums up his ill-defined condition by stating that he feels unable to work

Little by little the predominant feature of the disease, anemia, makes itself manifest The fever disappears, the hemoglobin goes steadily down and the train of symptoms dependent, in part, at least, thereon, come sharply into prominence Most of the vague initial symptoms become positive Headache, vertigo, tinnitus aurium, a louder and louder hemic murmur, weakening of the pulse and dyspnea ensue until, with the hemoglobin below 30 per cent, or even 20 per cent, graver signs present themselves The pains in the sternum are an almost universal cause of complaint at this stage An ever increasing debility and a more pronounced mental hebetude are noticeable The patellar reflexes are generally reduced and later may even be abolished, and paresthesias of the lower extremities are common Impotence in the male and amenorrhea in the female are constant and striking phenomena in severe cases and are by no means rare in moderate ones

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-eighth Annual Session held at Atlantic City June 1907 A portion of the section on symptomatology is omitted from THE JOURNAL. It appears in the Transactions of the Section and in the author s reprints

A very little more and the patient reaches that point where even the result of anthelmintic treatment is problematic We now have before us a very sick patient The circulatory system is profoundly affected The heart, slightly hypertrophied at first, is now not only weakened but is often dilated, a condition adding to the already complicated picture the familiar lines of a broken compensation Edema of the feet and legs and puffiness of the face now become a general anasarca, and pericardial, pleural and peritoneal effusions are apt to take place The hemoglobin falls below 30 per cent, even to 8 per cent, and the muddy yellow, pasty pallor eloquently testifies to its great reduction The patient is bedridden, passive to his surroundings and gradually passes away as if narcotized, save that in the fatal cases of acute cardiac dilatation, cerebral effusion or violent diarrhea supervene, not uncommon accidents in our experience

The prognosis is generally good, even in severe cases, under appropriate treatment Less hopeful are those complicated by persistent diarrhea, due to an enterocolitis, or other grave accident, especially marked anasarca from cardiac dilatation To show, however, what results may occasionally be obtained by anthelmintic treatment, an example mentioned in our first report is worthy of quotation

> The patient's whole body was water logged She could hardly walk, could not see, the eyelids looked as if dry cups had been applied, and when her pulse was taken, the impression of the whole hand was left deeply sunken, yet she recovered and became perfectly well, rosy and fat, running from 20 per cent to 90 per cent hemoglobin

Extremely low percentage of hemoglobin is not in itself an unfavorable sign With a few exceptions, our cases of 10 per cent to 15 per cent responded readily to treatment, even some of 8 per cent and 9 per cent made complete recovery

MORBID ANATOMY

Despite the great amount of literature on uncinariasis in recent years, no subject is so barren of data as its pathologic anatomy, and yet this is decidedly one of its most interesting and instructive features Not only are uncomplicated cases, suitable for the drawing of conclusions, difficult to acquire, but the consent of the relatives to autopsies is by no means easy to secure Above all, deaths occur far out in the country, and usually before an autopsy can be performed, postmortem changes are well advanced The latter obstacle was our most troublesome one, as the death rate in our field hospital was very small, indeed, it was but one-third of one per cent for the entire number of 18,865 treated between May and December, 1905 at all stations combined

In spite of these difficulties, eleven out of twelve autopsies were made in such manner as to furnish accurate information, in so far as the gross anatomy is concerned, nine supplied us with tissue in a very good state of preservation for microscopic study The minute anatomy of the other two is not included on account of the length of time after death at which the autopsy was made Of the nine specified above, one subject was five years of age and had never received any anthelmintics, one was fourteen, and the remainder between twenty-five and fifty Six showed extreme anemia, one other was an intense case and two more were moderately severe Only two were complicated by other conditions, in one a healed lesion of pulmonary tuberculosis was found, the other presented the intestinal lesions of amebic dysentery Nothing was shown in the latter to invalidate our conclusions

GENERAL OBSERVATIONS

As a rule, the body shows no emaciation and the amount of adipose tissue is apparently normal There is not only much edema but all soft parts, including skin, muscle and internal organs, have suffered great change in color due to the intense anemia The skin and subcutaneous tissue are very pale and sodden with fluid The muscles are brownish gray, friable and often atrophied On microscopic section the individual muscle-cells are frequently separated and the protoplasm seemingly starved and reduced in amount, an observation which, indeed, applies to nearly all organs

On opening the abdomen, an excess of pale yellow or straw colored peritoneal fluid is observed, the amount reaching enormous quantities in certain cases where ascites is a prominent feature In one of our cases this serum was reddish yellow, but no adhesions or other signs of inflammation were found Serous effusion is also generally demonstrable in the pleuræ, pericardium and sometimes, in the cerebral ventricles

THE HEART AND LUNGS

There was often hypertrophy, although, not rarely, a heart of normal size was encountered It was not unusual to see an excess of pericardial fat Not uncommonly, however, dilatation had occurred and the organ was remarkably flabby and easily torn Microscopically, in two of three autopsies, brown atrophy was well marked and a slight degree of myocarditis was discovered Fatty degeneration of the muscle fiber was clearly seen in two cases after fixation of the tissue by Fleming's solution The separation of individual cells was particularly noticeable and this was irrespective of the fixing reagent employed

The lungs were frequently the seat of edema and passive congestion

THE LIVER

This organ was practically never normal Great increase in size was only once discovered, although never was there diminution Its most frequent color was a light brownish yellow In some cases it was very light yellow, soft and greasy to the touch and extremely friable Microscopic sections demonstrated that it was often extensively affected in uncinariasis Extreme fatty degeneration was the prominent feature of four cases and in two scarcely a normal liver cell could be found, the condition of the liver here simulating marked types of fatty changes in other diseases characterized by such changes In none of our autopsies was fatty degeneration absent In its least exaggerated form it chiefly affected the outer third of the lobule

In three cases there was increase of connective tissue in the portal spaces, but in two of them the change was only slight, and, in at least one, where there was great increase, the condition was probably due to chronic alcoholism Connective tissue increase is evidently not a feature of uncinariasis Daniel's observation that the liver contains considerable yellow pigment could not be confirmed, save in one case, although small amounts were found in others The pigment was not stainable by potassium ferrocyanid Extreme dilatation of capillaries was found in two cases

THE KIDNEYS

These organs were also profoundly involved They were very pale and were apt to be slightly enlarged As a rule, the capsule stripped easily Microscopic sections showed us a practically constant picture of chronic parenchymatous or chronic diffuse non-indurative nephritis In persons of middle age, who had suffered for some years from uncinariasis, there was increase in connective tissue, but this was marked in only one case Usually, there was little or no connective tissue increase and polymorphonuclear leucocytes were conspicuous by their absence

Changes were always found in tubules and glomeruli, but the convoluted tubules suffered most severely and fatty degeneration and desquamation in them was marked The collecting tubules were much less affected There was extensive exudation into Bowman's capsule with desquamation of its endothelial lining and much dilatation of the intracapsular space Hemorrhages into Bowman's capsule, intertubular hemorrhagic areas and blood and epithelial casts, were found in four of the nine bodies sectioned, and the picture was that of an acute condition superimposed on the usual chronic one described All four of these had received betanaphthol In one case, yellow pigment was found, but only in small quantity In two instances embolic abscesses existed

STOMACH

It was not usual to encounter uncinariæ in the stomach, although 83 were found in its lumen in an autopsy previously reported by us[1] We discovered several adherent to the wall of this organ in this year's series A gastric catarrh was common and marked dilatation was noted in two subjects

INTESTINE

The jejunum contained most of the uncinariæ found at autopsy Some were unattached, others were adherent to the mucous membrane In the first part of the duodenum were to be found most of the rest, a few being discovered in the ileum None were encountered in the colon

In more than one instance the parasites were alive twelve to fifteen hours after the death of the patient, whether attached or free They were rarely red, generally white or grayish On one occasion they were removed with some little force by fine forceps and placed in physiologic salt solution, where they lived and remained active for about sixty hours longer and then were killed for experimental purposes

The lesion of the intestine is confined, as far as we know, to the mucosa. It was found to be a tiny superficial erosion, not a deep ulcer as many suppose, about 0 5 mm (1-50 inch) in diameter and not usually characterized by any redness, save at one autopsy These erosions were very difficult to find without a hand lens, unless a parasite had just been removed from its feeding ground, and the locality marked The duodenum, and especially the jejunum, are the seats of a chronic intestinal catarrh and many times after we supposed that all parasites had been removed in the course of the examination of the intestine at autopsy, many more were found buried in the thick mucus which more or less completely covered them

The rest of the intestine, and even the colon, is apt to share in less degree in the general chronic inflammation Degeneration and atrophy of the mucosa of the intestine, as well as of the stomach, were commonly observed We have purposely left to the last a consideration of the really striking changes in the spleen, hemolymph glands and bone marrow, as these are marked and, until now, neglected in all treatises which we have read on uncinariasis

THE SPLEEN

Most authors state that the spleen is not enlarged, but lead us to believe that it is normal As a matter of fact, the spleen frequently is reduced in size, soft, and possesses a wrinkled capsule

Dr Rafael Cesteros, of Guayama, Porto Rico, the director of the commission's substation in that city, reporting on one autopsy, writes of this organ as follows

> The atrophy of the spleen attracted my attention It was as small a spleen as I have ever seen in my professional career and at no autopsy, whether made for scientific or for medico legal purposes, have I encountered this organ of such reduced dimensions Its color was that of wine lees and its size was not greater than that of the kidney

Microscopic sections revealed in every one of the eight autopsies in which a portion of the spleen was preserved, a great paucity of lymphoid elements, even decided decrease in the protoplasm of the cells The Malpighian corpuscles were greatly reduced in size, the cells were scanty and widely separated, and the central artery presented, almost uniformly, considerable hyaline degeneration. Not only were the tufts smaller than normal but they seemed fewer in number

The apparent increase in connective tissue we explain by the decided reduction in lymphoid elements and blood, and it seemed relative rather than absolute, although in some instances, thickening of the capsule was observed Pigmentation was only once very prominent, and the pigment was of the same character as that seen in the liver There was unusually little blood in the organ

HEMOLYMPH GLANDS

The following notes were made by us at one of our autopsies

> Great abundance of glands in the region of the abdominal aorta was noted, especially at its bifurcation They were enlarged, and of a dull reddish hue, like pale muscle tissue Some of these glands were as large as hazel nuts, yet there was not a trace of inflammation in the surrounding parts and the peritoneum over them was normal and glistening

They were only sought for in one other autopsy and then were found with the same characteristics, but in smaller number Microscopic section showed that they were hemolymph glands, usually of the type described as splenolymph glands Mitoses and phagocytoses of red cells were noted

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[1] Amer Med Sept 5 and 12 1903

BONE MARROW

The marrow of the midpoint of the shaft of the femur was examined in two autopsies It was grayish red and very soft Microscopic section disclosed, in addition to the changes described in the marrow of subjects dying of pernicious anemia, groups of eosinophilous cells, generally myelocytic These cells were abundant, as were myeloplaxes No attempt has been made to describe in detail the changes to be found in the organs referred to in this brief summary

THE ANEMIA.

The anemia of uncinariasis is not merely such a condition as would result from repeated small hemorrhages One of its marked peculiarities is its irregular eosinophilia and another is its severity at times in subjects harboring but few parasites, at others its failure to become marked in very heavy infections

HEMOGLOBIN

The average hemoglobin in 579 cases, taken at random before treatment, from among our 1904 series, was 43 09 per cent Eight per cent has several times been registered by both the Dare and the von Fleischl instruments Fifteen to 20 per cent was very common in severe cases and 35 to 50 per cent was generally the range of moderate ones The hemoglobin percentage is the steadiest guide to the condition of the patient, as a very low percentage may exist with a fair number of red cells, 0 5 being about the average color index

Some phenomenal rises in hemoglobin were noted after simple expulsion of uncinariæ without any ferruginous or other regenerative treatment, rises which seem impossible were it not for the fact that fully as remarkable improvement takes place in the patient himself, the gain in healthy color testifying to the actual return of his blood to normal For example In one case, a woman, aged 38, with a hemoglobin of 35 per cent on admission, there was a rise of 61 per cent in 15 days, although but two doses of betanaphthol were given and 453 of the total number of 497 uncinariæ expelled

We gradually learned that iron was not a necessary part of the treatment of uncinariasis, as a rule Certainly a somewhat more rapid rise in hemoglobin occurred when iron was used, but the return to normal came about just as surely without it and we ceased to use it among our average cases, reserving its administration for obstinate ones in which blood regeneration was faulty and all parasites had been expelled Blaud's pills seemed to us the best form of iron, as stated in our 1904 report, but it is a matter of but little importance, in the end

In these cases of tardy rise of hemoglobin there was apt to be a period of about two months in which no marked increase was noted, when in the succeeding month the normal was reached by rapid strides In others the hemoglobin rose steadily without being hurried in the least by large doses of Blaud's pills

The following résumé of sixty cases in our 1906 series, is of interest in this connection They are cases of patients in whom the hemoglobin was estimated on admission and discharge, and the actual number of uncinariæ expelled after each dose of the anthelmintic was determined Twenty are cases of patients to whom betanaphthol was given weekly, with daily doses of iron in the intervals, thirty-two received thymol weekly and iron in the same manner, and nine received thymol or betanaphthol without the use of any drug in the interval The patients were not always held in the hospital until the hemoglobin became normal, because an expulsion of all parasites was almost certain to be followed by the cure of their anemia, a fact abundantly demonstrated to us in the thousands of other cases under treatment as outpatients, and by our past experience

Treatment	Betanaphthol weekly, iron in intervals	Thymol weekly, iron in intervals	Betanaphthol or thymol; no drug in intervals
Number of cases	20	32	9
Average initial hemoglobin, per cent	33	32 8	42 6
Average days under treatment	40	37 3	17 3
Average rise, per cent, in hemoglobin for time specified	51	52 4	28 3
Average number of uncinariæ expelled	1,064	1,264	501
Average rise hemoglobin per cent daily	1 2	1 4	1 6

Attention is invited to the fact that the cases treated without iron were less severe, as a rule, and that this alone explains why, with better recuperative power, the blood making organs were enabled to cause a greater daily rise in hemoglobin Nevertheless, the advantages of iron, in average cases of moderate severity, are not seen to be very great A fall in hemoglobin is the first sign of the anemia and this fall may be considerable, even as much as to 30 per cent, before the erythrocytes are greatly reduced in numbers On the other hand, the rise in hemoglobin almost always lags behind the rise in red cells under treatment

ERYTHROCYTES

In our 1904 series of 61 cases in which weekly blood counts were made until the normal was reached, 2,406,416 erythrocytes per c mm was the average The lowest count made was 754,000 per cmm There was polychromatophilia and, in severe cases, poikilocytosis with many macrocytes and microcytes Normoblasts and megaloblasts were not uncommon, but the latter are generally much in the minority

LEUCOCYTES

There is no leucocytosis which is constant, but slight increase in leucocytes is at times seen, especially in acute cases In chronic cases there is apt to be leucopenia Our average white cell count was 8,009 per cmm on admission In making differential counts, 250 leucocytes were classified, and in this connection we wish to emphasize the decided tendency of leucocytes to degenerate Stimulation cells of Turck were frequent in some cases, but their appearance was very uncertain and we were unable to assign any special significance to them Myelocytes, generally eosinophilic, were seen occasionally, but were not common

Eosinophilia is the chief feature of importance It is strange that Boycott and Haldane lay so much stress on the importance of eosinophilia, from a diagnostic point of view, for in the more serious cases it is liable to be absent In 1904 we called especial attention to our belief that eosinophilia was of great prognostic importance and have noticed that some German and Spanish writers subsequently express this same view Very chronic cases, of severe type, poor resisting power, and lack of blood regeneration, rarely show eosinophilia, or, if at all, only to a slight degree A rise in eosinophilia is of good prognostic significance and their fall, with lack of improvement in the symptoms, is not a good omen. In general, good resistance to the hypothetical toxin of uncinariæ is expressed by eosinophilia.

TREATMENT

The prime object of treatment is to expel the uncinariæ, and our choice of the anthelmintics will naturally be the one most rapidly and easily effecting this result.

We attempted to ascertain the relative efficiency of male fern, thymol and betanaphthol by counting the actual number of uncinariæ expelled by each dose During the twenty-four hours following the administration of the drug, all the feces evacuated by the patient were passed into an individual vessel and treated with a 10 per cent formalin solution, which destroyed, in most instances, practically all offensive odor As a rule, the evacuations were liquid, but if not, water was added The twenty-four hour feces were strained through cheesecloth and thoroughly washed. The residue, which usually was small in quantity, was transferred with a porcelain spoon to a small dish or cup, care being taken to pick off with forceps any worms remaining on the cloth The counting was done in a trough of convenient size, made by nailing a narrow strip on each side of the board and painting the inside black A small quantity of the fecal residue was placed in the trough and water was added, a few drops at a time, washing it away bit by bit, the trough being inclined barely sufficiently to cause a flow The worms can be easily detected against the black surface and be picked out by forceps Care must be taken that the water is not added too rapidly or some of the worms may be washed away Lumps of feces should be broken up and all fragments of food, etc, inspected for adherent worms While hardly esthetic, these operations are seldom particularly offensive

The results of our counts were interesting and indose of either of these preparations of filix mas was given We used first an ethereal extract of this drug from one of the most reputable German pharmaceutical laboratories, but although it caused constitutional symptoms, practically no uncinariæ were expelled by it As we had purchased the drug from a local pharmacist, we thought that possibly it had been some time in the tropics and had become deteriorated from climatic influences, to which it is said to be very susceptible A fresh solid extract was then obtained direct from one of the best known pharmaceutical houses It was immediately put into use, with no better results as an anthelmintic, although the constitutional effects were much more marked than those of thymol or betanaphthol

The highest number of uncinariæ expelled by a single dose of either of these preparations of filix mas was eight, while one of the same patients later expelled 3,686 uncinariæ after a single dose of three grams of thymol So much time had been spent in these unfruitful trials that had we ordered other preparations of the drug, we could not have completed a series of counts owing to the short time left for the completion of our work Considering the success which has followed the use of male fern in Germany, we are at a loss to understand why we should have scored such a failure with it, unless this drug very rapidly becomes worthless in warm countries

In testing these anthelmintics our intention was to administer them at weekly intervals and to continue for two weeks after uncinariæ ceased to be expelled We found that it was often impossible to hold the patients in hospital long enough to do this, because by the time they had expelled most of their parasites they felt so much better that they insisted on going home, and if denied permission to do so, would desert Hence we were obliged to throw out many counts as incomplete but we did include those in which less than twenty uncinariæ were expelled by the last dose given, even though there was no opportunity to administer later doses, which might have brought away a few more in some cases and none in others This slight inaccuracy does not materially affect our results

In the preliminary report, 1905, of the Anemia Commission, is published a table giving the number of uncinariæ expelled by each dose of betanaphthol Reference to this table will show with what heavy infections we were dealing, the lowest being 73, the highest 4,395, and the average 1,027 The amount of anthelmintic is not stated, as it varied even in the same patient at different times The dose had to be based on the age and condition of the patient, and thus the table represents the actual results obtained by these vermicides when properly used in practice The following figures express the comparative percentages of the total number of uncinariæ expelled by each of these drugs in 70 cases

PERCENTAGE EXPELLED OF THE TOTAL NUMBER OF UNCINARIAE HARBORED BY THE INDIVIDUAL

Dose.	Average of 40 patients treated with thymol	Average of 30 patients treated with betanaphthol
1	76.85	72.24
2	92.80	85.12
3	97.55	93.67
4	99.06	96.57
5	99.80	98.71

Some time after these counts were begun it was discovered that, at times, all the uncinariæ killed by the anthelmintic would not be evacuated during the first twenty-four hours, even though there had been free purgation, but that others came away in the second and more rarely, the third twenty-four hour period Thus Boycott and Haldane are mistaken in supposing that after the twenty-four hours the dead uncinariæ are digested No doubt some of them are, as we found partially digested ones, but we think their statement too sweeping Had we recovered all the worms appearing on the second and third days, we would have recorded a slightly greater number expelled, particularly after the first and second doses, but the percentages of results would have been changed scarcely more than a fractional part

There is a surprising equality of anthelmintic effect after five doses of either drug, though thymol shows a somewhat greater rapidity under equal conditions of proper preparatory treatment However, when the preliminary purge and, more especially, the abstinence from solid food for a day are omitted, betanaphthol shows much less favorably We used some hundreds of pounds in the out-door clinic, the patients taking the medicine after returning to their homes They generally took the purge, but the directions to abstain from solid food were more honored in the breach than in the observance Many of those to whom betanaphthol was given kept returning week after week and at each time revealed ova of uncinariæ in the feces In other words, the presence of food in the bowel seemed to interfere with the efficiency of betanaphthol more than of thymol for those who took thymol in their homes expelled their parasites almost as rapidly as those whose diet we could supervise Frequently in these resistant cases a dose or two of thymol caused a complete disappearance of ova from the stools, while increased doses of betanaphthol did not have so marked an effect

Betanaphthol is not only less efficacious, but it is more dangerous It has, at times, an irritant effect on the kidney, setting up an acute toxic nephritis in an organ so often the seat of chronic parenchymatous changes This effect was not common, but the accident was so serious as to warrant our return to thymol as a much safer vermicide Thymol on rare occasions may irritate the kidney, but its effect is much less severe It may produce, infrequently, more or less severe collapse The chief objection to its use was its irritating effect on the bowel and several times, we believe that enterocolitis has been initiated by its administration

Eucalyptol is now being studied by the present commission, but their report has not yet been made Both thymol and betanaphthol were administered in the same manner except that one-half as much betanaphthol was used at a dose as thymol Betanaphthol in larger doses did not seem to give proportional results

The patient was required to abstain from solid food during the day and at night 25 grams of sodium sulphate was given The next morning, providing free purgation from the salts was secured, after a glass of hot milk or on a fasting stomach, one-half of the anthelmintic was given and repeated in two hours, followed, about noon, by another purge which may be omitted if the bowels are moving freely This procedure was repeated each week until ova disappeared from the feces

We have given thousands of doses of thymol without having known of a case of poisoning from it, notwithstanding that at times, we knew that, contrary to our orders, alcohol in some form had been taken to relieve the dizziness and other disagreeable effects sometimes produced by thymol in large doses

In choosing the anthelmintic we have to be governed somewhat by the circumstances of the case, condition of the patient, and so forth, but, all things being equal, we decidedly prefer thymol for general use When it is not possible to use it, betanaphthol is an excellent substitute The taking of either is unpleasant and, naturally, we want to use that one which the least number of doses need be taken to obtain the greatest result

Our thanks are due to Drs Carroll, Russell and Gray of the laboratory of the Army Medical Museum and Dr Rosenau of the Hygienic Laboratory, Washington, D C, for many courtesies extended us in our work on the morbid anatomy of uncinariasis and acknowledgment is made of painstaking services rendered by First Class Sergeants Neat and Britton, Hospital Corps, U S Army

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EXPERIMENTAL ANEMIA *

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When one considers how incomplete is our knowledge of the anatomy and physiology of the hematopoietic system it is perhaps not remarkable that the diseases of that system should have remained so long shrouded in obscurity Although the clinical pictures of the anemias and leukemias are sharply defined, their pathology still offers many problems When in his classical description of pernicious anemia Addison noted that it occurred "without any discoverable cause," he stated the first and greatest problem of that disease and one which a half-century of investigation has not been able to solve, although by clinical, pathologic and experimental studies it has been able to narrow the field of search somewhat However, this, the etiology of the disease, still remains its great problem

The second problem arose at a time when the clinical picture, especially the blood picture of this anemia described by Addison, had not been sharply defined, and it arose from the description by Biermer and many others of progressive and pernicious anemias following many well-defined causes, causes almost too numerous to catalogue, and causes which in general are followed by an anemia of the so-called secondary type This difficulty was partially cleared up by the clinicians who showed that the Addison anemia had a distinctive blood picture It has left still unsettled, however, the question as to whether or not at some stage secondary anemias of varied causation may not present the blood picture of pernicious anemia

So the second problem may be stated as the relation of the primary and secondary anemias To express it more fully, if pernicious anemia be not always due to the same cause, but to many causes, and among them to those that at times produce anemias of the secondary type, what is the factor which determines the type of blood picture?

The third problem is one that arose from the pathologic investigations of the disease Cohnheim discovered the characteristic bone-marrow lesion of the disease, and it was later thoroughly studied by Ehrlich and others, who emphasized its greatly increased megaloblastic content as pathognomonic of the disease As a result of these studies many have considered the bone-marrow changes as the primary lesion in the disease and accountable for the blood changes and other lesions

Exclusive of the bone-marrow changes the pathologic study has revealed in many cases no lesions that could not be considered as secondary to the anemia, with the exception of the lesion emphasized chiefly by Quincke and Hunter This lesion is the excessive deposition of iron-containing pigment in the liver and kidneys especially, though occurring also in the spleen and other organs These deposits were interpreted as the result of the action of a hemolytic substance on the red blood cells and formed the basis of the theory accepted by many that the disease is essentially a hemolytic process and that hemolysis occurring in the circulation is responsible for the other lesions of the disease

This theory received additional support from the facts that infection with the intestinal parasite, *Bothriocephalus latus*, gives the typical picture of pernicious anemia and that an extract of the worm has been shown experimentally to produce hemolysis in dogs Yet it became evident that hemolysis alone is not adequate to explain the disease, for hemolysis with deposition of blood pigment is a factor in secondary anemias not caused by hemorrhage

The third problem then concerns the pathology and the pathogenesis of the disease, the value of the claims as to the primary lesion Is there a primary bone-marrow lesion or is there an original hemolysis with subsequent changes in the marrow?

Briefly, then, the problems of pernicious anemia concern its entity as a disease and the establishment of the blood picture, its relation to other types of anemia, its pathogenesis and its etiology All of these are not subject to experimental investigation The establishment of the blood picture and of the disease as an entity has been done by clinicians and pathologic anatomists A definite blood picture characteristic of the disease has been made out, and it has been determined that there is a disease corresponding to Addison's description with this definite blood picture and with pathologically a characteristic bone-marrow lesion, signs of hemolysis and no lesion otherwise, apparently adequate to explain the anemia

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907

For the etiology one must look to further clinical and pathologic study On the other hand, the relation to secondary anemia, and the pathogenesis of the disease lend themselves to experimental investigation The work of Quincke, Hunter and others in establishing the fact that hemolysis is a large factor in the production of the anemia furnished the lead along which profitable experimental work has been done In this work the extensive study of hemolytic processes, stimulated by the Ehrlich hypothesis, has been of importance

In the first place, it has been shown conclusively that the blood picture of pernicious anemia can be produced experimentally in such animals as the dog and the rabbit, the animals used most extensively[1] This picture simulates the picture in human blood as closely as any pathologic picture produced in animals simulates the picture in man produced by the same etiologic agent The blood picture in rabbits shows the nucleated red cells both megaloblastic and normoblastic, often occurring in showers It shows further the characteristic changes in non-nucleated red cells a variation in size, with the predominant cells above the average normal diameter, a certain amount of poikilocytosis, polychromatophilia and in many cases a granular basophilia and even an increased color index (Tallquist) Even the reduced white cell count with a relative increase of the large mononuclear variety may occur In short, practically none of the features of the blood picture of pernicious anemia is lacking

Furthermore, a condition of the marrow agreeing with that found in human cases may be produced—a marrow in which there is a predominance of the megaloblastic type of nucleated red cells and of cells of the large lymphocyte type There seems to be no doubt, therefore, that one can thus produce the picture of pernicious anemia experimentally in animals

As to the manner in which this picture can be produced it is of interest, as it bears somewhat on the possibility of a multiplicity of causes in the production of pernicious anemia in man, that it may be produced by the injection of a number of substances—but substances which have a common characteristic and that is, that they are hemolytic for the corpuscles of the experimental animal

I have used artificially produced hemolytic sera, but chiefly ricin and saponin Others have used pyridin, pyrogallol and other toxins With large doses of ricin or saponin, injected intravenously and repeated at intervals, one may produce a progressive anemia with the blood picture described to the point at which the animal establishes a tolerance to the poison The animals react with machine-like regularity to the dose of poison, with a sharp nucleated red cell reaction and a fall in the number of red cells, with a gradual assumption by the non-nucleated red cells of the abnormalities noted

This reaction, the blood picture and the marrow picture are entirely different from those of a secondary anemia produced in animals by hemorrhage In these latter cases, with repeated hemorrhage and a constant fall in the red cells, there is no sharp nucleated red cell crisis, megaloblasts are not found in the circulation and normoblasts but occasionally, after the first reaction The color-index falls rapidly, the corpuscles becoming extremely pale, and the marrow has the characteristic picture seen in cases of secondary anemia where the nucleated cells of the normoblastic type are the predominant cells It is an entirely different picture While this picture of pernicious anemia may be produced by several hemolytic substances it is only produced by them if they are injected into the circulation in relatively large doses, which is of importance in considering the pathogenesis of the disease

If these hemolytic substances are injected, not intravenously but subcutaneously or intraperitoneally, the result is entirely different The hemolysis goes on, deposits of blood pigment are found in the spleen, there is a reduction in the red cell count, but the blood picture and the marrow picture are different unless very large doses are used The sharp nucleated red cell reaction in the circulating blood is not seen, the fall in the number of red cells is less sharp, and the marrow shows the picture of a secondary anemia with the great predominance of normoblastic cells so characteristic

Briefly, by the injection of a large dose of hemolysin directly into the veins, one gets the primary anemia blood picture, by the injection of the same dose, or even larger doses subcutaneously, when absorption into the circulation is slow one gets the picture of a secondary anemia and a similar difference occurs in the marrow pictures

The explanation of this difference lies, it seems to me, in the appearance of the marrow of animals dying after a recent dose of toxin Where the toxin has been injected intravenously in sufficient doses it is not entirely saturated by red cells before it reaches the marrow and one finds as a result signs of direct injury to the marrow, in extensive necrosis of cells and in injury to the capillary endothelium resulting in minute hemorrhages That there is hemolytic destruction of nucleated red cells is shown by naked pyknotic red cell nuclei found both in the marrow and in the circulating blood and also larger cells in the marrow show pyknotic and fragmented nuclei Where the injection has been subcutaneous, unless the dose of toxin has been extreme, the injury to the marrow is very slight and may even not appear

Herein lies the explanation, I believe, of the relation of anemias of the pernicious type to those of the secondary type, due to causes other than hemorrhage That is, in a disease like tuberculosis, in addition to the general malnutrition, there is a constant but slow absorption into the circulation of substances destructive to red blood cells This absorption, however, is so gradual that the toxin is completely anchored by circulating red cells, causes their destruction or injury as shown by the splenic accumulation of blood pigment, but does not reach the marrow in an uncombined state As a result the marrow escapes injury

As far as the marrow is concerned, the lesion is the equivalent of a hemorrhage It is uninjured and is able to repair the blood lesion in a normal way in as far as the general nutrition of the patient will permit On the other hand, in pernicious anemia at some periods large quantities of a hemolytic poison gain entrance to the circulation, are not completely combined with circulating red cells and reach the marrow. There they cause destruction, not only of mature red cells, but of nucleated red cells and the function of the marrow is impaired, leading to a faulty response to the call made on it to repair the lesion—and the blood picture of pernicious anemia is the result.

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[1] The experiments forming the basis of this paper will be found in detail in the following references Etiology and Pathogenesis of Pernicious Anemia, Johns Hopkins Hosp Bull 1905 xvi 222 Experimental Anemia in the Rabbit Jour Exp Med. 1906 viii 625

It seems possible in this way to explain why in certain severe secondary anemias the picture of pernicious anemia is seen in the blood. One need only postulate that in a progressing anemia there comes a time when the pathologic process, the tuberculosis for example, also progresses more rapidly, more toxin is produced to be absorbed into the circulation, there are fewer red blood cells to neutralize it, and enough of it reaches the marrow uncombined to cause an injury to the marrow cells—and then the pernicious type of blood picture results.

Why one finds this blood picture as a result of marrow injury seems to depend largely on the anatomic grouping of the cells in the marrow. As I have emphasized in previous papers, the cells seem to be so arranged in the marrow that by the multiplication of the parent cells in the erythrogenetic and leukogenetic centers the young cells as they mature are gradually pushed toward the periphery of the group and thus the mature differentiated cells, the polymorphonuclear leucocytes or the non-nucleated erythrocytes are found on the periphery close to the marrow capillaries. These mature cells are the reserve stock from which the circulating blood is supplied to fill in deficiences caused in the normal wear and tear of the circulation, and normally the marrow cells proliferate only rapidly enough to keep this supply at par.

Let there be an unusual demand, as for leucocytes in an acute inflammation, and one finds that at first the marrow is cleared of all its mature polymorphonuclear cells, and myelocytes form practically the entire white cell count in the marrow. Mitosis and maturation of the products of division, however, soon produce an abundance, usually a superabundance, of polymorphous cells, and the demand is supplied. Occasionally, as in acute lobar pneumonia, the great demand for leucocytes may cause the marrow to react with immature white cells, myelocytes—which are often found in small percentage just before the crisis in that disease.

A similar story is that of the red cells. In a hemorrhage of moderate severity the marrow responds with its mature red cells and proliferation of nucleated cells takes place to supply the demand. Commonly the demand exceeds the supply of mature red cells and normoblasts are contributed to the circulating blood, but seldom in great numbers. Megaloblasts only extremely rarely are found in the stream.

This is the reaction in a hemorrhage or secondary anemia, and if the cause be withdrawn the blood count gradually returns to the normal as the result of this reaction of an unimpaired marrow. In man one misses a hypererythrocytosis corresponding to the leucocytosis which expresses the pathologic reaction in excess. This probably is due to the fact that serum withdrawals from the tissue keep the red cells diluted to the normal number, even though they be produced in excess. In an animal like the rabbit, with dry tissues, a reaction in excess may be obtained, with high red cell counts in the circulation, and then a gradual return to the normal.

Now in the cases with marrow injury we have an entirely different reaction for the reason, it appears, that the toxin reaches first these mature red blood cells and the normoblasts and causes their destruction in part. In its first response the marrow throws into the circulating blood the most peripheral and most mature cells left, and these are often normoblasts and intermediates which appear in the circulation in a shower often aggregating thousands per cubic millimeter.

If the injury be more severe, intermediate nucleated red cells and even megaloblasts appear in the circulation as the other cells have been destroyed. This, however, is ruinous to the proliferative power of the marrow, cells capable of mitosis have been lost to it. As a result, with this continued demand for red cells, there is a hasty transition from megaloblast to erythrocyte—without the orderly progression, through intermediate and normoblastic stages. The resulting cell is thus larger than normal, bears more hemoglobin and possibly is an attempt at compensation—an attempt to make quickly a cell which shall be the equivalent of more than a single normal cell. The distorted forms are expression also of this faulty hematopoiesis.

The nucleated red blood cell crises or showers so widely considered as signs of regeneration on the part of the marrow can not be so considered from the results of experimental anemias. They do not occur during recovery from hemorrhage or injury, but only immediately following direct injury to the marrow by toxins, and it would appear must be interpreted as the result of that injury. The marrow deprived of its mature red cells responds with the nearest substitute it has—the immature nucleated red cells. The greater the injury to the marrow, so much less the maturity of the cells which it can offer to supply the deficiency, so after severe or repeated injury the number of megaloblasts which are found in the circulation is increased and they are in a way an index of the gravity of the lesion.

On the evidence then of experimental work and of pathologic study it seems justifiable to conclude as to the pathogenesis of pernicious anemia that it is due to the absorption into the circulation of a substance or substances of hemolytic power toward human red blood cells, and in such quantities that it produces not only destruction of circulating red blood cells, but also destruction of, and injury to, cells of the erythrogenetic groups in the bone-marrow. This results in a defective and atypical blood formation, some phases of which may be considered as an attempt at compensation, others as a sign of injury.

One may conclude further that in secondary anemias there is a loss of red blood cells or a destruction of red blood cells by toxins. In either case the marrow is unaffected except in being stimulated to respond in a normal manner with the orderly production of non-nucleated red blood cells, and that its proliferative power is not impaired. At some point in the disease, however the amount of toxin may be so increased that the marrow becomes injured and the blood picture becomes of the pernicious anemia type.

As to the source and nature of this poison in pernicious anemia, there is little to add. In one type only, the *Bothriocephalus* infections, has it been determined. In those cases the source is the intestine, the poison a hemolytic substance derived from the worm. Such cases may recover, with a normal blood picture, after removal of the parasite.

In the great majority of cases no *Bothriocephalus* infection exists. In these one must assume another cause. There is a tendency, however, on the basis of clinical and pathologic findings to regard the gastrointestinal tract as the source of intoxication From the clinical side gastrointestinal symptoms in pernicious anemia patients are frequent and often severe, the persistent diarrhea with the general weakness furnishing the reason that brings the patient to the doctor

From a pathologic standpoint a chronic gastritis is a frequent lesion found in the patients, and Hunter has called attention to the frequency with which oral sepsis and in particular a chronic glossitis are found in these cases He considers that the infection of the mouth extending to lower portions of the gastrointestinal tract is the cause of the disease

There seems to me much in this theory of Hunter's, and while I can quote no large series of personal investigations of the oral cavity, I would like to record that in two recent cases of pernicious anemia in which the oral cavity was examined there were found extensive dental caries and pyorrhea alveolaris, and also at the base of the tongue a chronic inflammatory process, in one of the cases, with shallow superficial ulceration In the other case there was no ulceration but a degeneration and numerical atrophy of the tongue muscle and a deep sclerosis with round cell infiltration and hyperplasia of the mucous glands

In both cases there was also a chronic gastritis There were no other lesions found to which the anemia might be attributed I hesitate to lay much stress on the importance of this chronic glossitis, as I am unable to furnish control statistics as to the microscopic condition of the tongue in cases dying of other diseases than anemia I have, however, failed to observe the glossitis grossly

If the lesion be due to infection of the gastrointestinal tract the clinical history of partial or almost complete recovery of the patient with subsequent relapse, or repeated alternation of these states would suggest that the infecting organism was one against which a lasting immunity was not obtained It may be one which possibly leaves the patient even more susceptible—the common history in infections by the organisms of the streptococcus, pneumococcus and gonococcus groups There is no absolute evidence that the organism does belong to that group, and yet there appears to be no evidence that it does not. As to etiology, we must still say with Addison as to the great number of cases, that it is a disease without any discoverable cause whatever

[The discussion on the papers in the Symposium on Anemia (articles by Drs Ashford and King, Bunting, Cabot, and Meltzr) will appear with the two articles last mentioned]

Certified Milk.—This term, which has been copyrighted to prevent its misuse and to limit it to products marketed under the direction and sanction of medical milk commissions, had its origin with the Medical Milk Commission of Essex County, New Jersey which was organized in 1893 to secure a supply of milk which should always conform to a definite standard of purity There are now 22 such commissions in the United States chiefly in the eastern states The original commission has just made its twenty first report This commission deals with only one dairyman, who employs in the production of the milk 1 000 acres of land, 515 cows and produces daily 2.900 quarts of certified milk. A new concrete stable has been constructed on the most modern plans A bacteriologic laboratory is established It appears from the reports that the objects of the commission are being satisfactorily attained. The report gives a very instructive view of what can be done by private medical supervision to secure the sanitary purity of an important food product

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THE PRINCIPLES OF VACCINE THERAPY

BACTERIAL INOCULATION UNDER THE GUIDANCE OF THE OPSONIC INDEX *

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INTRODUCTION

I have undertaken to outline to you to-night—so far as I can do so within the limits of a single lecture—the principles of vaccine therapy, i e, of the treatment of bacterial disease by the inoculation of the corresponding vaccines Let me preface what I have to say on this subject by reviewing briefly the methods—other than vaccine therapy—which we have to-day at disposal for the treatment of bacterial disease The following are, I think, the only methods which here come into consideration

(1) Treatment by chemical antiseptics
(2) Treatment by the extirpation of the obtrusive focus of infection
(3) Treatment by the determination of lymph to the focus of infection
(4) Serotherapy
(5) Expectant treatment

TREATMENT BY CHEMICAL ANTISEPTICS

Antiseptics have found in medicine a threefold application They have been administered internally with a view to checking microbial growth in the blood, or in regions which can be reached only by the channel of the blood They have been applied locally with a view to holding in check and extinguishing localized bacterial infections They have been used for the purpose of checking putrefaction in discharges and devitalized tissues Neither the first nor the third of these applications calls for any discussion For some time past it has been all but universally recognized that it is futile to attempt to check bacterial growth in the interior of the organism by our present antiseptics, which have a greater affinity for the constituent elements of the body than they have for any bacteria[1] Again, there has never been any doubt as to the possibility of suppressing putrefactive changes by antiseptic irrigations Attention, therefore, may be concentrated here on the issue as to whether or not the antiseptic applications are effective in holding in check and extinguishing localized bacterial infections

It is, of course, currently believed that this method of treatment is effective It is in this faith that the surgeon introduces antiseptics into septic wounds, or, when he happens to be so minded, into abscess cavities It is in this faith that the physician resorts in the case of pulmonary infections to antiseptic inhalations And it is in this faith that the dermatologist, gynecologist, laryngologist, aurist, and genitourinary specialist are strenuous in the application of antiseptics each to the particular province of the body which he takes under his special care It will be profitable for us to collate the facts and to consider whether or not there is in reality any trustworthy basis for the belief that inspires all this practice

Significant in this connection appears to me the fact that antiseptics are now by general consent abandoned in the treatment of ordinary surgical wounds Signifi-

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*Editor's Note This represents a lecture delivered before the Harvey Society New York Oct. 20 1906 The manuscript however was only received July 22, 1907 so it is fair to assume that it embodies the author's latest ideas on the subject.

[1] We have a general formula for such antiseptics when we say in technical terms which perhaps improve a little on those of Ehrlich, that they are more histotropic than 'parasitotropic.

cant also is it that the practice of introducing antiseptics into abscess cavities, which was erstwhile so common, is now less and less frequently resorted to Significant again is it that treatment by antiseptics in case of bacterial invasions of mucous membranes is to-day more and more frequently followed up by curetting, scraping, and so-called radical operations Above all, significant is it that so distinguished a dermatologist as Sabouraud should sum up the results of antiseptic treatment of bacterial diseases of the skin as follows

> Curious indeed is the failure of antiseptics in connection with the treatment of bacterial diseases of the skin Quite colossal were the expectations which were entertained with regard to what would be effected by these What antiseptics have accomplished by their agency amounts in point of fact to next to nothing
>
> The results which have been obtained in connection with pulmonary infections by antiseptic inhalations and in connection with bacterial infections of the genitourinary passages by "urinary" and other antiseptics are, I am persuaded, neither better nor worse than those which have been obtained in connection with diseases of the skin Now all this failure of antiseptics is, I submit, only what might have been expected *a priori*

Let me put the case as it appears to me

It is, of course, axiomatic that antiseptics can take effect only on those bacteria with which they come in contact It is obvious also that in the case of bacterial infections of the skin and mucous membranes the infecting bacteria will not all be lying on the surface, and that they will not when lying on the surface be limited, with respect to their distribution, to those regions which are accessible to antiseptics It follows, therefore, that it will be unreasonable to expect from any application of antiseptics anything in the nature of a complete sterilization In every case there will remain a residue of surviving bacteria, and the survivors will inevitably multiply and reoccupy the disinfected surface

And this is not all The antiseptic will not, as the unthoughtful assume, add its antibacterial power to the antibacterial power of the living organism On the contrary, the antiseptic will directly antagonize the protective forces which the living organism has at command, it will paralyze the phagocytes, and will abolish the antibacterial power of the blood fluids By the action of the antiseptic the disinfected surface will thus be left swept and garnished for reoccupation by the expropriated bacteria

And again this is not all The antiseptic application will also injure the histologic elements and in particular the capillaries of the tissues to which it is applied It will thus lead to an *outpouring of lymph* from the disinfected surface That outpouring will not only wash away the antiseptic but when a skin surface is in question it will convert the natural dry and horny epithelial armor into a lymph sodden envelope, which will be easily penetrable by bacteria

TREATMENT BY THE EXTIRPATION OF THE OBTRUSIVE FOCUS OF INFECTION

In case the invading bacteria have penetrated into the interior of the body, their destruction by antiseptic applications obviously will be out of question, and the policy of proceeding against the bacteria by surgical methods will come up for consideration

I can understand that extirpation may be imperative when an organ has been completely disorganized by invading bacteria and when there is danger to life from the spread of the infection I can understand also that a case can be made out for extirpation when there is prospect of removing all the infecting bacteria without danger or sensible mutilation Lastly, I can understand that it will be an added advantage if an extirpation-operation removes along with the infecting bacteria a useless organ which is specially subject to infection

But assuredly these are not the conditions under which the majority of scraping and extirpating operations are undertaken And in particular these are not the conditions which confront us in those extirpation operations which are employed as a routine treatment in localized tuberculous infection Here, long before the surgeon has been called on the scene, many of the bacteria may have been carried by the agency of the blood and lymph stream, far out of reach of the knife

It will be clear that it can not be claimed for extirpation operations undertaken in these circumstances that they are in any real sense of the term radical operations They are operations which aim only at the extirpation of one or more obtrusive foci of infection

In harmony with this conclusion is, the fact that tuberculous disease so often recurs after operation, exceptionally in the form of general tuberculosis, commonly, as a localized process either in the site of the operation, or in some new site Such results would at first sight appear to be due simply to the mechanical disturbance effected by the operation in the focus of infection But another factor probably is at work here —notably when tuberculosis recurs acutely either locally or as a general infection A reduction in the antibacterial power of the blood may supervene on operative interference

TREATMENT BY THE DETERMINATION OF LYMPH TO THE FOCUS OF INFECTION

The method of extirpation by the knife is only one of the methods which can be employed for the treatment of bacterial infections when these have passed beyond *the reach of antiseptic applications* Of the other methods, the more important are the application of hot fomentations, the evacuation and drainage of abscess cavities, massage, the methods of Bier and Klapp, and the various forms of radiotherapy In all these methods—and it is this which has induced me to bring them together here under a single heading—we have as a prime factor a determination of lymph to the focus of infection, and, as a secondary factor, a conveyance into the blood of lymph which in passing through the focus of infection has been impregnated with bacterial products Before I have done I shall explain to you in connection with the passage of blood fluids into the focus of infection, that these blood fluids will exert in every case some antibacterial effect on the invading bacteria, and in connection with the passage of bacterial products from the focus of infection into the blood that these products will invariably effect very important modifications in the blood both in reducing and in increasing its antibacterial power

There are thus *a priori* grounds for expecting useful therapeutic effect from each and all of these methods, and such useful therapeutic effects are achieved in many cases There are also, however as you will already have appreciated, *a priori* grounds for expecting that there will occasionally result from the application of these methods not only failure but disaster It is within our knowledge that failures are common in connection with all these methods of treatment and also that disaster has followed massage, the venous congestion of Bier, and radiotherapy It will presently become clear that disaster may be expected whenever, by the application of these methods, bacterial products are introduced into the blood in immoderate quantities

SERUM THERAPY

All the therapeutic methods mentioned have application only to localized bacterial invasions Serum therapy has more ambitious aims After a successful application in the treatment of diphtheria, this method—and this without intermediary trial in connection with simple, localized and correspondingly more tractable forms of infection—has been applied to the treatment of the most desperate and complicated varieties of bacterial infection Serum therapy has found application not only in septicemic infections but also in pulmonary phthisis, in which there is practically always a most complicated mixed infection In these applications serum therapy, I submit, has everywhere disappointed expectation

It is not enough to realize the fact of failure Wherever, as here, in the application of any therapeutic method, repeated failure is encountered, we are called on to make a critical review of the facts and to enquire into the rationale of the method which has found acceptance In accordance with this principle we are called on to consider here whether there is any assured basis for the treatment of bacterial infections by serum therapy That treatment is, in point of fact, built up on the postulate that the animal organism possesses the capacity of responding to the incorporation of practically unlimited quantities of bacterial cultures by a practically unlimited output of bacterial substances Now, this assumption, while it might be thought to win support from the analogy of what occurs when diphtheria or tetanus toxin is incorporated into horses, is entirely out of accord with the results which are ordinarily obtained by the inoculation of bacterial cultures When it is considered how different are the every day events which supervene on bacterial inoculations from that miracle of immunization which has been accomplished when as a result of injections of diphtheria toxin there has been obtained in a volume of some few cubic centimeters of horses serum sufficient antitoxin to confer antitoxic power on the whole volume of a patient's blood, one is prepared to recognize that there is justification for the assumption that there will result from the introduction of a moderate amount of serum into a patient's blood, anything in the nature of a marked increase of his antibacterial power

EXPECTANT TREATMENT

I now come to the expectant method of treating bacterial disease—the last of the five therapeutic methods which were enumerated at the outset of this paper

In the expectant treatment we have a therapeutic method which is based on the adoption of a policy of non-intervention as between the invaded organism and the invading bacteria It is agreed that by this method—which consists essentially in feeding and nursing the patient and keeping him at rest in bed—far better results are achieved in generalized bacterial infections than any that could be obtained by active medication We need only to call to mind here the fact that under the expectant treatment from 80 to 90 per cent of recoveries are achieved in typhoid fever

There is also a reverse to the medal In typhoid fever there is from 10 to 20 per cent of fatal cases in streptococcal septicemias and in plague—to mention only two out of the more formidable bacterial infections—there is a mortality in comparison with which the percentage of recoveries is insignificant Further, in Malta fever there is a considerable percentage of cases in which the fever drags out almost indefinitely This indictment of failure—of failure in septicemic diseases—is very far from being the only indictment which can be brought against the expectant method

Comparatively speaking, generalized bacterial infections are rare and transient incidents in life The really serious ills of life are the various localized bacterial infections which sooner or later fasten on every man, never afterward releasing their hold It follows from this that a graver allegation is brought against a method of treating bacterial disease when it is alleged that such method has no application in localized bacterial processes than when it is pointed out, as it has been here in connection with the expectant treatment, that it is a method which disappoints in many varieties of generalized infection, and a method which commits the destiny of the patient—so far as that destiny is involved in the issue of his conflict with the invading microbes—entirely into the hands of chance

Now the graver charge of having no application with localized bacterial diseases may be brought against the expectant method of treatment It is only, as I apprehend the matter, in case life is threatened by the entrance of bacteria or bacterial products into the blood—and as we shall see later not even invariably in that case—that Nature seriously addresses herself to the task of immunization So long as a bacterial invasion is still strictly localized Nature opposes to it nothing more than a passive resistance It follows that in localized infections it is idle to wait on Nature and to expect from her any work of immunization It would be impossible, I think, to over-rate the practical importance of this generalization Physicians will realize the importance of this if they will take any series of cases of endometritis, middle-ear disease, chronic bronchitis, lupus, or other localized bacterial disease, and will take into consideration the number of years the infection has persisted

I can call to mind among patients whom I have treated recently no fewer than three cases in which lupus has persisted for over forty years

PRINCIPLES OF VACCINE THERAPY AND SKETCH OF THE MACHINERY OF IMMUNIZATION

Having now passed in review the therapeutic methods which are in use in the treatment of bacterial disease, I propose to turn to the main theme of my discourse and to deal with the treatment of bacterial disease by vaccine therapy The essential feature of this method is the scientific exploitation for therapeutic uses of the protective machinery with which the organism is equipped

Two elements come into consideration in the protection of the organism against invading micro-organisms The leucocytes with their digestive ferments constitute one of these elements, the antibacterial substances in the blood fluids constitute the other

A word or two will be appropriate in connection with each of these elements of our protective machinery

(a) *Leucocytes*—The leucocytes come into consideration in connection with resistance to bacterial infection by virtue of the fact that they are capable of ingesting bacteria and of disintegrating these by intracellular digestion We may usefully distinguish between "spontaneous" and "induced" phagocytosis By the former of these terms we may denote that process of ingestion which comes under observation when bacteria which have not been subjected to the action of the blood fluids are brought in contact with washed leucocytes in an indifferent medium such as physiologic salt solution. "Spontaneous" phagocytosis as here defined is distinguished by the facts that it is a comparatively slow process, that the number of bacteria ingested by each leucocyte attains ordinarily only very modest proportions, and that the ingestion is irregular in the sense that individual polynuclear leucocytes differ very strikingly from their congeners with respect to their intake of bacteria—the majority of leucocytes pick up from such a bacterial suspension as is ordinarily employed, very few if any bacteria, while others ingest relatively considerable numbers—and lastly, by the fact that the ingestion of bacteria can be completely suppressed by employing in the phagocytic mixture a concentration of slightly over 1 per cent of sodium chlorid Strikingly different from such spontaneous phagocytosis is the "induced" phagocytosis which comes under observation when leucocytes are brought in contact with bacteria which have been or actually are at the moment subjected to the action of serum The induced phagocytosis which occurs in these conditions is distinguished by the following facts First, it is an exceedingly rapid process, second, with hardly an exception, every adult leucocyte is here phagocytic (instead of some few leucocytes taking part immoderately while the others abstain), third, when the supply of micro-organisms is unrestricted the leucocytes ordinarily will fill themselves to absolute repletion, and, fourth, the leucocytes will continue to ingest bacteria in a concentration of salt which entirely suppresses "spontaneous" phagocytosis

Seeing that phagocytosis of bacteria without subsequent intracellular digestion would be meaningless from the point of view of the protection of the organism, it will be plain to you that the digestive powers of the leucocytes would here come up for consideration For the present, however, I am debarred from entering into such a discussion, not having yet qualified myself to speak at first hand on the matter Permit me none the less to give here my tribute of admiration to the brilliant initiating work which has been done on this subject by your fellow member, Dr Opie[2]

(b) *Antibacterial Elements of the Blood Fluids*—The blood fluids differ essentially from the nutrient fluids which are ordinarily employed by the bacteriologist for the cultivation of micro-organisms in the respect that while the latter are nutrient fluids pure and simple, the blood fluids, in addition to nutrient constituents, contain antibacterial elements The antibacterial elements which are here in question are of "bacteriotropic" elements in the sense that they turn toward and enter into combination with elements of the bacterial body Our knowledge of the modifications which are effected in the bacterial body under the influence of the bacteriotropic substances in the blood fluids is extremely incomplete It is known, however, that the effect of the blood fluids on the bacterial body may manifest itself in various ways The bacteria may be killed without being dissolved The bacteria may not only be killed but dissolved We may group these together as bactericidal and bacteriolytic effects The bacteria may be so altered as to agglutinate in the presence of salt (agglutination effect) The bacteria may be so altered as to be readily ingested by phagocytes (opsonic[3] effect) Inasmuch as the blood fluids produce in bacteria the different chemico-physical effects here enumerated, and inasmuch as agglutinating and opsonic effects can be obtained independently of each other and independently of any bactericidal and bacteriolytic effects, we may assume that we have in the blood fluids, in addition to bactericidal substances (or bactericidins) and bacteriolysins, also agglutinins and opsonins

Of these four varieties of bacteriotropic substances the opsonins appear to be the most important We may ascribe to them a predominating importance, first, because it can be shown that the opsonic effect is exerted by either the normal or immune blood on every species of bacteria, whereas the agglutinating effect is exerted only on special varieties of bacteria, and the bactericidal and bacteriolytic effects are exerted among pathogenic micro-organisms apparently only on the typhoid bacillus and the cholera vibrio The opsonins derive further practical importance from the fact that they can be accurately measured (the error of estimation in the case of normal bloods and in the hands of a good worker being rarely greater than plus or minus 5 per cent) and that it is possible, seeing that the opsonic effect of the normal blood fluids is very marked, to register not only (as in the case of the agglutinating power) an increase but also a reduction in the opsonic power of the blood Such increase and reduction in the opsonic power is, of course, measured by comparing the amount of purely induced phagocytosis which is obtained with a normal blood with the amount of purely induced phagocytosis which is obtained with the blood of the patient under examination

HOW FAR IS THE PARTICULAR COMPOSITION OF VACCINE A MATERIAL ELEMENT IN THE SUCCESS OF AN INOCULATION PROCESS?

From the consideration of the protective machinery of the organism let me now turn to the consideration of certain preliminary points in connection with the bacterial vaccines which operate on that machinery The first question which confronts us here is the question as to how far the success of an inoculation process is dependent on the particular composition of the vaccine I have in view here in speaking of the particular composition of the vaccine not the axiomatic requirement that it must be affiliated to, or connected by affinity with, the microbes which it is designed to combat, but rather the minute details with regard to its source and manufacture

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[2] Since the date of this lecture I have confirmed the results of Opie and have found a method of displaying his results by the aid of leucocytes obtained from blood drawn from the finger It may be of interest perhaps to subjoin here the technic I have employed As you will have recognized it is modeled on the inoscopic methods of Joussett A capillary pipette which is fitted with a rubber teat is taken in hand A puncture is made in the finger and one volume of blood—a quantity of from 10 to 20 cm is adequate for the purposes—is aspirated into the stem of the pipette Filling up each time to the same mark four equal volumes of distilled water are aspirated into the pipette and these four volumes of water are mixed with the one volume of blood in the neck of the pipette By this maneuver we hemolyze all the red corpuscles leaving the white corpuscles intact The pipette is then placed in an incubator at blood heat and kept there for ten or more minutes The diluted blood will now have coagulated in the neck of the pipette The next step is to fill another pipette with physiologic salt solution and to project this in the form of a stream on the coagulated blood This process is continued till the clot has contracted firmly on the white corpuscles which are held in suspension in its meshes and until every trace of serum is washed away The last traces of our wash water are then removed and in its place a quantity of liquefied 15 per cent gelatin equivalent to twice the original volume of blood is poured into the pipette Finally the tube is sealed up in an airtight manner and placed in an incubator regulated so as to maintain a temperature of about 50° C After an interval of from twenty four to forty-eight hours it is found that the clot has undergone autodigestion and that the gelatin surrounding the clot has lost its power of solidifying on cooling The fact that these changes do not occur in the presence of serum is demonstrated by a control tube which has been treated in exactly the same manner except that it has received a small addition of serum

[3] Derived from the Greek ὀψωνέω I convert into palatable pabulum

Reflection will make clear that the success of an immunization process must depend, in the first place, on the power of immunizing response which the organism may happen to possess with respect to the particular bacterial infection or intoxication process which is in question, and, in the second place on (a) the composition of the vaccine and (b) the dosage and method of administration

Up to the present the composition of the vaccine has been considered to the practical exclusion of the question of dosage Whenever ill success has attended a process of immunization, or whenever it has appeared to any one that it ought to be possible to improve on the result already obtained straightway the suggestion has been put forward that some change ought to be made in the composition of the vaccine In such cases living vaccines have been proposed as substitutes for sterilized vaccines, vaccines derived from virulent cultures as substitutes for vaccines derived from avirulent cultures, vaccines derived from cultures more closely affiliated to the microbes against which protection is sought as substitutes for vaccines obtained from cultures less closely affiliated, vaccines derived from agar cultures for vaccines obtained from broth cultures, and vaccines obtained by the trituration of bacteria by autolysis, or treatment by caustic alkalies and subsequent precipitation with acids as substitutes for vaccines which have been sterilized in the ordinary way by heat

It has been claimed in connection with each of the modifications here in question that its employment is dictated both by weighty *a priori* considerations and analogies and by actual experiments Of the *a priori* considerations and analogies which have been adduced I will consider only the contention that living vaccines ought to be preferred to vaccines which have been sterilized by heat on the ground that inoculations with the former furnish close analogies with actual infections which are known to confer immunity, whereas there are no such close analogies between these last and inoculations with vaccines which have been subjected to the action of heat To this I could rejoin that even supposing the temperature of boiling water, which the objector has in view to produce in a bacterial culture chemical changes as fundamental as those produced by that temperature In egg albumin, a temperature which just suffices for sterilization, might well leave the chemical constitution to a bacterial culture for all practical purposes unaltered, just as there is a temperature short of the coagulating temperature which when applied to a hen's egg will prevent germination, while leaving the chemical characters of its albuminous substances substantially unaltered

If I refrain from all attempt to meet analogical reasonings of this kind the many other suggestions which have been put forward in connection with the constitution of bacterial vaccines, it is because I hold that in scientific controversy the proper procedure is always to either bring to light proof of a contested proposition, or to make *tabula rasa* by demonstrating that such proof is not forthcoming

Now analogical reasonings can not supply definite proof nor can they—seeing that no argument from analogy can ever be effectively discredited by the production of any conflicting analogy—restore to us that *tabula rasa*, which is ever, next after assured knowledge our best intellectual possession

Often our returns are profitable when we proceed by the pathway of reasoning from experiment By this path we arrive always at some intellectual good When we find a contested conclusion to rest on a firm basis of experiment we are entitled to incorporate it in a definitive manner into our sum of knowledge When we find a flaw in the chain of reasoning we are entitled to reject and to put far from us the conclusion, recovering for future exploitation unencumbered foundations

Allow me, in view of these general considerations, to turn to the experimental evidence, and let me try to show that the reasoning which has been held to establish that a vaccine of a particular composition is more effective than vaccine of somewhat other composition has been inconclusive in every case Let us begin by realizing that when an animal which has been inoculated with a particular vaccine succumbs to a test inoculation this result does not establish the conclusion that the vaccine which was employed is ineffective It demonstrates only that the vaccine was ineffective, or that the dosage was ill chosen, that the test inoculation was ill-timed, that the test inoculation was excessive, or that two or more of these factors were at fault

A fortiori when comparative experiments are undertaken on two animals or on two different sets of animals with different vaccines, and when one of these survives while the other succumbs to the test inoculation all that has been established is that the one vaccine employed in a particular dose x has, at the date of the test inoculation, conferred a greater measure of protection then another vaccine employed in another dose y Now it is obvious that unless we have assurance that the doses x and y which have been employed in the comparative experiments represent the optimum doses of these vaccines (or doses which stand in each case in the same relation to those optimum doses) we can have no assurance that the survival or nonsurvival of animals is determined by the difference in the vaccine and not by a difference in the dose Nor no serious attempt has ever been made to employ in comparative experiments exactly equivalent doses of the competing vaccines Therefore, in the course of our study of the question as to how far the particular composition of the vaccine is material to the success of an inoculation process, there has come to light the fact that we are not yet in a position to affirm that one variety of vaccine possesses an advantage over another from the point of view of its power of conferring immunity It has also become clear that no progress can be made in the resolution of the ulterior question which has been considered until we have settled the preliminary question as to how the equivalent doses of two vaccines can be arrived at, and how the immunizing efficacy of a bacterial inoculation can be most effectively tested. So material is a comprehension of this last question to the understanding of the principles of vaccine therapy that I need not make any apology for embarking on its consideration

WHAT IS THE BEST METHOD OF MEASURING THE IMMUNIZING EFFECT PRODUCED BY THE INOCULATION OF A BACTERIAL VACCINE?

The method of test inoculation, i e, the method of inoculating a living culture into an animal which has been previously treated with a vaccine and of comparing the result obtained in this animal with the result obtained on a control animal inoculated with a similar test dose of living culture, has hitherto been accepted as a perfectly satisfactory method of gauging the immunizing effect of a vaccine While it is undeniable that when the vaccinated animal survives and the control animal succumbs this method supplies a satisfactory proof of the immunizing power of the vaccine In case the vaccinated animal succumbs it may deceive us in deepest consequence When the test inoculation has been undertaken with an excessive amount of the living culture we may fail to obtain evidence of achievement of a sensible measure of protection Again, when the test inoculation follows hard on the inoculation of the vaccine the animal may—and we shall presently see the explanation of this—succumb as rapidly as even before the control animal, without any fault being attributable to the vaccine In fact the more rapid death of the vaccinated animal after a premature test inoculation, paradoxical as this may at first sight appear, in reality may be indicative of the excellence instead of the inefficacy of the vaccine

If these things are so, it is clear that there may well be a more excellent method of gauging the immunizing effect of a vaccine than that which is furnished by judging by the event of a test inoculation Reflection will show that if we can take it as assured—and I submit that we can—that the machinery of immunization is understood, at any rate in its broad features, and if it is indubitable—as in point of fact it is—that the phagocytic reaction of the leucocytes and the content of the blood in antibacterial substances can be measured with a degree of accuracy which is sufficient for all practical purposes And if by means of these quantitative methods it is feasible to construct curves showing the march of events and the changes which are associated with the inoculation of a bacterial vaccine, it must be possible by the aid of such curves to gauge in a more accurate manner than by any test inoculation the immunizing effect of a vaccine, and to determine in the case of any two vaccines what are the doses which produce precisely equivalent effects The method of vaccine therapy which is here in question proceeds on these assumptions It postulates that we have in the curves which set forth changes in the bacteriotropic power of a patient's blood, and in particular in the curves which set forth changes in the opsonic index of his blood a record of blood changes which in every case exert a dominating influence on that patient's bacterial infection I am very sensible of the fact that justification for these generalizations can be afforded only by the gradual accumulation of evidence Allow me, however, pending the time when such evidence shall have accumulated in your hands, to forestall events and to endeavor to call up by the aid of an immunization chart a picture of the facts which were elicited by my fellow worker, Capt S R Douglas, and myself in a case of localized staphylococcus infection which was successfully treated by the inoculation of staphylococcus vaccine

INCREASED PHAGOCYTIC RESPONSE AND SUCCESSFUL IMMUNIZATION

Increased phagocytic response is associated with successful immunization, and this increased phagocytic response is dependent on an increase in the opsonic power of the blood fluids and not on an increased capacity for spontaneous phagocytosis on the part of the white corpuscles

The immunization chart (Fig 1*) furnishes a typical illustration of the achievement of increased phagocytic response in association with successful immunization The phagocytic power of this patient's blood, when he came under treatment for an aggravated localized staphylococcus infection, was equivalent, as shown in the chart, to less than half that of a normal man By the agency of successive inoculations of a staphylococcus vaccine his power of a phagocytic response was augmented till it was equivalent to nearly three times that of a normal man

At the point which is indicated by an x on the chart—and the clinical condition of the patient had by this time improved in a marvelous manner—an investigation was set on foot with a view to determining whether the increased phagocytic response which had been achieved was referable to an increased power of spontaneous phagocytosis on the part of the white corpuscles or to an increased opsonic power in the blood fluids

In order to decide between these two alternates a duplicate series of tests was instituted In the experiments of Series 1 washed corpuscles prepared from the patient were tested (a) in association with his own serum and (b) in association with the serum of the normal man who served as a control In the experiments of Series 2 the washed blood corpuscles of the normal man who served as a control were tested (a) in association with the immunized patient's serum and (b) in association with his own serum In each case the technic was that which I have elsewhere described, the same amount of the same staphylococcus suspension being in each case introduced into the mixture of corpuscles and serum The phagocytic counts which were obtained under these circumstances were as follows

The phagocytic counts (i e, average number of microbes ingested by each P W B C) which were obtained under these circumstances were as follows

Series 1 —

- (a) Washed corpuscles of immunized patient employed in association with the serum of the immunized patient, 25 7
- (b) Washed corpuscles of immunized patient employed in association with serum of the normal man who served as control, 13

Series 2 —

- (a) Washed corpuscles of normal man who served as control employed in association with serum of immunized patient, 28 2
- (b) Washed corpuscles of normal man who served as control employed in association with the serum of the normal man, 13

What now do we learn from these phagocytic counts? We learn from a comparison of the phagocytic counts in experiments (a) and (b) in Series 1 that the serum is a factor which profoundly influences phagocytosis It does not emerge from a comparison of the two phagocytic counts, Series 1 (a) and (b)—inasmuch as here in each case the same variety of leucocytes was employed—whether or not the phagocytic count is influenced by the variety of leucocytes A comparison of the phagocytic counts (a) and (b) of Series 2 once more shows that phagocytosis is influenced by the variety of serum And again—for the same reason as before—a comparison of these two phagocytic counts leaves it undecided as to whether or not phagocytosis is influenced by the variety of leucocytes which is employed

From consideration of the all but complete identity of the phagocytic counts obtained in Series 2 (a) with the count obtained in Series 1 (a) and again from the identity of the phagocytic count obtained in Series 1 (b) and Series 2 (b) it seems clear that the phagocytic count is uninfluenced by the variety of corpuscles employed In short, the whole experiment teaches us that the changes which are associated with the acquirement of immunity are changes in the blood fluids and not changes in the white corpuscles This conclusion, in addition to its theoretical interest, has also, be it remarked, an absolutely fundamental practical importance It will make it clear that we may take the opsonic index of any blood as an index of the patient's power of phagocytic response

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*Editor's Note Chart 1 was not received A duplicate has been sent for and will be published on its arrival

DETAILED STUDY OF THE CURVES OF IMMUNIZATION OBTAINED BY THE INOCULATION OF BACTERIAL VACCINES

We have next to make a detailed study of the curves of immunization which are obtained by the inoculation of bacterial vaccines and to make acquaintance with the laws which govern the output into the blood of the opsonins and other bacteriotropic substances which are produced in the organism in response to an *ictus immunisatorius*

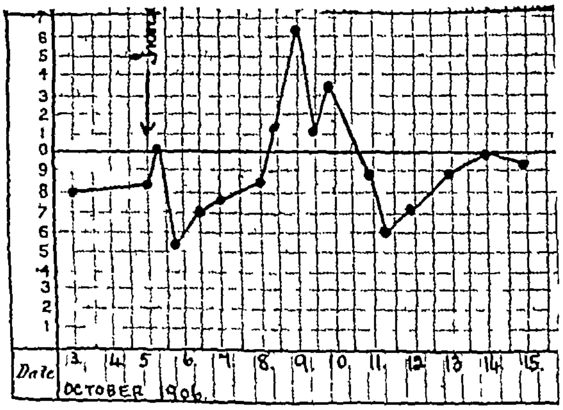

Fig 2—Chart of opsonic index The inoculation at the point marked Inoc was of 1/2 000 milligram T R

Such a record as is furnished by the immunization chart reproduced in Figure 1 gives an inadequate and, be it noted, a fallaciously inadequate account of the events which occur in the blood after the inoculation of bacterial vaccines When, instead of testing the blood after inoculation at intervals of from seven to ten days, as was done *in the case* of the patient whose immunization chart has just been considered, the blood is tested from day to day, it is borne in on us that the augmentation of the bacteriotropic power—or, let us rather phrase it, the rise in the bacteriotropic pressure—of the blood is generally preceded by a fall It is impressed on us also that the rise which is achieved by inoculation is only a transient rise, and that the bacteriotropic pressure generally declines after the interval of a few days, sinking away until it reaches the point at which it started, in other cases, it runs along for a time at a level only a little above the original base line I have spoken of the sinking away of the bacteriotropic pressure of the "negative phase" and of the rise in pressure as the "positive phase" of the reaction of immunity And I have tried to delineate in words the whole oscillation by speaking of "the ebb" (*the negative phase*) "the flow" (*positive phase*), "the backflow" (subsequent decline of the curve) and "the sustained high tide of immunity"

This phase describes only the larger features of the curve When more frequent, and in particular when earlier blood examinations are made another practically constant feature reveals itself This is the *transient* initial rise preceding the negative phase We may think of this as of an anacrotic wavelet which arrives before the main wave of immunity This wavelet and its position in the general scheme of oscillation is shown in Figure 2

It is *not to be assumed* that the form of curve as set forth in the chart (Fig 2) is universally conformed to When a dose of vaccine which is only just sufficient to produce a result is administered the negative phase is elided and there is registered only a positive phase The curve in such a case neither rises so high nor does it maintain itself so long above the base line as when a larger amount of vaccine has been administered

When an excessive dose of vaccine is administered—meaning here by an excessive dose a dose whose inoculation produces severe constitutional symptoms—the negative phase is proportionately accentuated and prolonged The bacteriotropic blood pressure may be reduced for a period of weeks, and the advent of a *positive* phase in such a case may be awaited in vain[4]

CHRONOLOGY OF THE DIFFERENT PHASES OF THE *CURVE* OF IMMUNIZATION

Having now learned the features of the curves which are obtained after the inoculation of different quantities of bacterial vaccines, we may further study the chronology of the successive incidents The traditional view—a view which would seem to have been derived from experience with vaccinia—is that a period of ten days is always required for the establishment of active immunity Largely owing to the fact that this view was adopted by Pasteur it became part of the routine religion of the bacteriologist—animals and men being subjected to test inoculations or to reinoculation on the expiration of a fixed period of ten days So far as I know, Haffkine was the first to claim that a condition of immunity was achieved within twenty-four hours after the inoculation of a vaccine He put forward this claim in connection with his plague vaccine, basing his contention on the statistical results of antiplague inoculations undertaken in India in the Byculla gaol and in the village of Undhera Some years afterward—the matter having in the meantime been advanced a step further by the publication, under Haffkine's auspices, of evidence pointing to the successful inoculation of patients who were already in the incubation period of plague—I obtained in the course of a study of the changes effected by antityphoid inoculation in the bactericidal power of the blood evidence of development of increased bactericidal power in the blood on the day subsequent to the inoculation of moderate doses of antityphoid vaccine Following on that, I obtained in connection with my first therapeutic inoculations of staphylococcus vaccine evidence of increased phagocytic response on the day subsequent to inoculation One would have thought that this would have constituted a record During the last twelve months, however, we have obtained in numerous cases conclusive evidence of an augmentation of the opsonic power of the blood within an hour after the inoculation of tubercle vaccine, and also trustworthy witness of associated clinical improvement within that time in case of inoculation of tubercle vaccine in an infection of the eye In the treatment of furunculosis by inoculations of staphylococcus vaccine we have also obtained trustworthy evidence of clinical improvement within an hour after inoculation The augmentation of the opsonic power and the clinical improvement which are here in question were correlated—in the case in which very small doses of vaccine were employed—with the development of the ordinary positive phase, and—in the case in which moderate doses of vaccine were employed—with the development of that feature in the curve which was referred to above under the designation of the initial rise

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[4] It may be interesting in this connection to note the *following* points (1) Immoderate negative phases due to overdosage rarely come under observation except in the case of patients who are new to inoculations After a prolonged series of inoculations it is the rule but by no means an invariable one to find that a large surplus of vaccine over *that* which is required to raise the bacteriotropic pressure of the blood can be tolerated (2) When by inadvertence an excessive dose of vaccine has been administered it is unnecessary definitely to await the return of the bacteriotropic pressure to the normal In such a case, the desired rise can practically always be obtained by reinoculating as *soon* as all constitutional symptoms have disappeared with a minimal dose of vaccine (3) The forerunner initial rise spoken of above may come into observation also in connection with the inoculation of an immoderate dose of vaccine It may perhaps be provisionally assumed that such initial rise is the response of the organism to the fraction of the total dose which is immediately absorbed

WOULD IT NOT BE POSSIBLE BY PILING ONE INOCULATION ON ANOTHER TO ACHIEVE A LARGER OUTPUT OF ANTIBACTERIAL SUBSTANCES AND IN ASSOCIATION WITH THIS A POSITIVE PHASE OF LONGER DURATION?

It will be every man's—at any rate every beginner's—thought that it ought to be practicable to achieve a larger output of antibacterial substances—if not by the employment of larger doses of vaccine, then assuredly by piling up inoculation on inoculation

I have already discussed this question elsewhere,[5] and have pointed out that while it may be possible when submaximal doses—using the term submaximal doses here to denote doses smaller than those which would give maximal immunizing response—are employed to obtain cumulation in the direction of the positive phase such a result with other vaccines—and in particular with the tubercle vaccine—can very rarely if ever be obtained When this situation confronts us the proper policy would appear to be to treat each inoculation as an independent event—following up one inoculation by another as soon as the effect of the antecedent one is passing off

IS IT EXPEDIENT TO EMPLOY IN SUCCESSIVE INOCULATIONS PROGRESSIVELY INCREASING DOSES OF VACCINE?

Close kin to those primitive ideas which suggest that the immunizing response must increase proportionately with the dose of vaccine employed, and that, failing this, it must be possible to obtain an increased immunizing response by piling one inoculation on the other, is the idea that it must be possible to achieve a greater yield of protective substances by employing in successive inoculations progressively increasing doses of vaccine In point of fact, experiment shows clearly, not alone that no advantage is reaped from a progressive augmentation or the doses of vaccine, but that such a course must inevitably lead on to disaster Indeed, it is obvious on *a priori* considerations alone that when the dose of vaccine is progressively augmented a point must sooner or later be reached at which the immunizing power of response will give out I would, therefore, put it to you that the proper principle of dosage in any series of inoculations is never to advance to a larger dose until it has been ascertained that the dose which is being employed is too small to evoke an adequate immunizing response A dose of vaccine may be adjudged too small as soon as it has been ascertained that its inoculation is not followed by a negative phase and that the positive phase is not well marked and is only of very short duration

THE SITE WHICH OUGHT TO BE SELECTED FOR THE INOCULATION OF A BACTERIAL VACCINE

A whole array of observations point to the local production of bacteriotropic and vaccinotropic substances generally at the site of inoculation In the first place we have the observation that an infinitely greater yield of antitoxins—and it would seem also of antibacterial substances generally—is achieved in horses by the subcutaneous as contrasted with the intravascular method of inoculation We have further the observation that in antityphoid inoculation a more effective protective reaction is induced in patients who show considerable local reaction at the seat of inoculation than in those who suffer from severe constitutional symptoms apart from any appreciable local reaction It has also been noted that local immunity may be acquired and retained apart from the acquirement or retention of general immunity If we may build—as it would seem that we may—on the aggregate of these observations it would logically follow that the site of every inoculation which is undertaken for the therapeutic purposes deserves to be carefully considered in connection with the site of the focus of infection which is to be influenced It will not suffice to inoculate into any region of the subcutaneous tissue which may happen to present itself as convenient It is true that for aught we know to the contrary one and the same amount of protective substances would be elaborated in each case A difference could, however, occur in this way When protective substances find access to the blood by a channel which does not lead through the focus of infection—let us for the purpose of fixing our ideas suppose that focus to be situated in a lymphatic gland—the newly elaborated protective substances will come into operation on that focus only after they have been diluted by the whole volume of the blood When on the contrary—if I may so express it—the inoculation has been made "up stream" from the focus of infection, i e, in some part of the lymph watershed which drains through the focus of infection, the protective substances which are produced at the site of inoculation may be expected to come into application on the focus of infection in a comparatively undiluted condition

Pending the time when the place of origin of the bacteriotropic substances which appear in the blood after inoculation shall have been definitely set at rest by some *experimentum crucis*, I have made some tentative therapeutic experiments on the relative efficiency of inoculations undertaken up stream from the focus of infection as compared with inoculations made in regions which were not so related to that focus I feel satisfied that those experiments—though they at the same time indicate that one and the same portion of tissues tires out on too frequent inoculations—have furnished results conformable to those which might have been expected to follow from the theory of the production of bacteriotropic substances at the site of inoculation To make only one case out of many, I was much impressed by the fact that the theory of the local production of protective substances[6] suggested a procedure which successfully arrested the spread of a tubercular process after all other methods had failed This result was obtained in the case of an ulcer which, though it had completely healed in the middle, was spreading outward in the form of a ring of indurated tissue Its arrest and definite cure was achieved when executing a strategic move I inoculated in a series of different positions disposed circle-wise around the extending ring

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[5] Clinical Journal May 16 1906, Transactions of the Royal Medico Chirurgical Society, vol lxxxix

ACQUAINTANCE WITH THE PHYSIOLOGY OF THE IMMUNIZING RESPONSE NOT A SUFFICIENT EQUIPMENT FOR AN IMMUNIZATOR

Up to this point we have been dealing with the physiology of immunization and the nature of the immunizing response For the successful treatment of bacterial disease by methods of immunization something more is required We must realize the conditions under which bacteria cultivate themselves in the organism We must understand under what circumstances bacterial products, or bacteria, as the case may be, are conveyed into the blood stream from local foci of infection We must appreciate how the organism reacts to such autoinoculations, and we must understand how to bring the leucocytes and bacteriotropic substances which are the instruments of immunization into operation on bacteria which are cultivating themselves inside the organism but outside the blood stream

(To be continued)

THE MANAGEMENT OF DISLOCATION AT THE SHOULDER JOINT COMPLICATED BY FRACTURE OF THE NECK OF THE HUMERUS[*]

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The occurrence of four cases of the above injury in my own work within seven months suggested a study of the condition and will serve as the reason for choosing this subject Even from so limited an experience one is prepared to say at the outset that fracture-dislocation at the shoulder happens more frequently than is usually supposed, that its recognition is not always an easy matter, and that its proper treatment is little understood There are several causes for this state of affairs Chief among these is the fact that text-books on surgery do not consider the matter in detail and teachers of surgery do not lay stress on it

In a list of ten authors consulted, one does not mention the subject, seven deal with it in a short paragraph, while only two treat it with anything like adequate importance Practitioners must therefore find difficulty and uncertainty in approaching such cases Moreover, much carelessness is manifested in examining shoulder-joint injuries, the physician often being content with superficial manipulations and the application of a sling or a bandage It must be admitted that a simple dislocation of the shoulder-joint is readily seen and remedied but when displacement is associated with fracture of the humeral neck the diagnosis and management are questions not easily determined For the purpose of this paper its title has been made to include fractures both of the anatomic and surgical neck of the humerus and these will be discussed together

The four cases occurring in my own practice are as follows

Case 1 *Old Unreduced Dislocation, with Fracture of the Surgical Neck, United in Abnormal Position History*—Mrs L H M, aged 32, was first seen Jan 5, 1905 About nine weeks previously (Oct 20, 1904)) she was thrown from a carriage, striking on her left shoulder A physician saw her soon after and recognized the nature of the injury, but failing in an attempt to reduce the dislocation, he directed his attention to the fractured humerus in order to obtain union of the bone and later to effect restoration of the joint

Examination—When the patient came for examination, it was seen that the left shoulder drooped, the muscles were atrophied, the arm exhibited only slight anterior and posterior movements, and the head of the humerus was immovably fixed in its new position (subcoracoid) There was apparently firm union of the fracture at the surgical neck

Treatment—Under anesthesia an attempt was first made to reduce the dislocation by Kocher's method As soon as the arm was rotated outward the bone snapped and the original fracture was reproduced An oblique incision was then made over the misplaced humeral head through the fibers of the pectoral muscles, with the intention of lifting the upper fragment out and restoring both the joint and the continuity of the bone This was found to be impossible and the only recourse was to obtain a false joint at the line of fracture. The incision was closed with drainage and the arm was placed in a sling, after bringing the shaft of the bone as nearly as possible at a right angle to the upper fragment, and as far away from it as permissible The woman remained under treatment for about ten days and left with instructions for massage and passive motion The result in this case has been far from satisfactory In spite of every effort to prevent it, the fragments reunited, so that the effect of the operation is *nil* The woman can get her hand to her mouth and the arm is of considerable service to her, but all the motions are restricted

Case 2 *Unreduced Dislocation Showing an Undiscovered Fracture of the Anatomic Neck History*—C P aged 20, while playing ball at school April 25, 1905, fell on his left shoulder He was not seen by a physician until five hours had elapsed and during this interval his schoolmates pulled long and hard at the joint in their endeavors to "put it in place" The doctor who first attended the young man said that he reduced the dislocation and some degree of restitution was evidently obtained, for there was no pain or discomfort for a week. After that time, however, he began to suffer and applied to a neighboring physician for relief It was then found that the dislocation had recurred and the patient was sent to Rex Hospital for treatment, nearly two months after the injury

Examination—On June 19, 1905, an examination disclosed a longstanding subcoracoid luxation of the left shoulder joint without marked muscular atrophy, the head of the humerus seemed unusually large and irregular in shape

Treatment—Remembering the experience in the first instance (Case 1), little time was lost in manipulation, but, instead, the open method was immediately resorted to In this case a straight incision was used, going directly downward from the acromion through the deltoid muscle to the extent of four inches With the aid of forceps and fingers the humeral head was restored to the glenoid cavity without opening the joint. Close inspection revealed a line of callus formation, and deformity, indicating a healed fracture through the anatomic neck of the humerus—the cause of failure in retaining the arm after apparent reduction. The wound was closed after inserting a small drain. A shoulder cap of plaster-of Paris was molded to the joint and secured by roller bandages In one week's time this was removed and passive movement begun The outcome of the case was most gratifying

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[6] In this connection I would throw out as a suggestion that the production of protective substances at the site of inoculation would be definitely set at rest if after the inoculation of a bacterial vaccine into a limb it were shown that an increase of protective substances in the blood could be achieved by either massage and the application of a Bier s bandage

[*] Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City June 1907

Before a month had passed the boy had almost perfect use of his left arm and now (nearly two years after) it would be hard to believe that the shoulder had ever been dislocated

CASE 3 *Old Dislocation of the Shoulder, Complicating a Comminuted Fracture of the Upper Extremity of the Humerus* *History*—H M R, aged 48, locomotive engineer, stepped from his cab in the darkness, missed his footing and fell down an embankment, striking on his left shoulder This happened June 4, 1905 He was seen at the time by a physician who told him that his injury was not serious and placed the arm in a sling It was not until July 16, 1905, a month and a half after the accident, that the patient came, through consultation, under my care During the interval he had received massage, electricity, hot water and passive motion A skiagraph had also been made, which gave the impression of a fracture of the scapular neck It was confusing rather than enlightening Afterward it was shown that the shadow of an outlying piece of the head of the humerus had produced the conception of a broken scapula

Examination—On examination the region of the joint was found to be swollen so that it was impossible to make out anything definite The movements were greatly restricted and the gentlest manipulations gave intense pain

Treatment—The operation of arthrotomy was performed July 19, 1905 By a five inch vertical incision from the acromion downward, the joint was opened through the torn capsule and there was revealed a comminuted fracture of the whole upper extremity of the humerus Six separate fragments were found The largest, which constituted the major portion of the articular surface, was firmly located under the coracoid process, while the rest were more or less in their proper relations to the shaft of the bone The lines of fracture extended through and beyond the surgical neck to a distance of four inches from the upper end of the humerus The bone tissue was soft and pulpy, while the pieces were embedded in firm adhesions The plan pursued was to remove all the loose bone and to pack the cavity with gauze, after closing the ends of the incision since it was out of the question to bring the upper end of the shaft into contact with the glenoid cavity The object was to form a flail joint and the end has justified the means At this writing (May 14, 1907), nearly two years after the operation, the patient can use the arm for all ordinary purposes and with the assistance of the other hand can put the arm in every position except wide abduction He says that it is much better than it was a year ago

CASE 4 *Recent Dislocation of the Shoulder Associated With Fracture of the Surgical Neck of the Humerus* *History*—M P, a farmer aged 60, July 25, 1905, fell from a wagon piled up with wood, into a ditch 12 feet below He was picked up and given all necessary first aid

Examination—Four hours later, when seen in consultation, it was readily found that, besides a compound fracture of the right femur, the man had sustained a subcoracoid dislocation of the left humerus, with a fracture of its surgical neck

Treatment—Under anesthesia in his physician's office a fruitless attempt was first made to reduce the dislocation, the anterior incision was then made from the acromion downward the head of the bone exposed and replaced without the slightest difficulty No wiring or suturing of the bone ends was needed, as they came into absolute apposition The incision was closed without drainage, a large triangular pad placed in the axilla and a plaster of Paris shoulder cap put on Both the immediate and remote results here were well nigh perfect At the present time the patient has as good use of his arm and shoulder as he ever had

These cases have furnished valuable lessons Their order of appearance had much to do with suggesting conclusions which are the natural outcome of this experience It will be observed that, first there came a case in which the patient was treated according to one of the formerly-authorized modes of procedure viz allowing the bones to unite in their abnormal position with a view to reducing the dislocation later and that the final result was practically a failure In the second difficulty in reduction and in maintaining it was due to an overlooked fracture of the anatomic neck of the humerus, a thing which could not have escaped notice with the open treatment In the third is shown a failure to ascertain the true condition even with the aid of the Roentgen ray, until the joint was opened The last instance is an example of an ideal method with an ideal result

Concerning the issues raised in the first case, it may be recalled that before the days of anesthetics immediate attempts at reduction were rarely successful "The older writers,' says F H Hamilton,[1] "almost without exception, agree in declaring the reduction of these dislocations impossible until the fracture had united And so late as the year 1828 we have the report of a case treated in this manner by a surgeon in Massachusetts " Hamilton goes on to observe that "in the event of a failure by these means the case ought to be treated as a fracture, and the earliest period after the union of the fragments should be seized on to accomplish the reduction of the dislocation "

But Gross,[2] in 1882, after stating the difficulties of reduction and noting the recommendation "to let the dislocated head of the bone remain in its unnatural situation," says

> Such an idea, however it seems to me, must be perfectly delusive, for it is impossible, under such circumstances, for Nature to make a good or useful joint Instead, therefore, of pursuing such a practice, I should not hesitate, if a case of the kind were to present itself to me, to cut down on the dislocated bone and push it back into its natural position, or if this be impracticable or deemed inexpedient, and the head of the bone be found to compress the axillary plexus of nerves, to perform excision

It must be evident that anything is preferable to leaving the dislocation unreduced Most of the cases so treated will come to the surgeon after they are "old" that is, when fixation has occurred, and generally there is then no alternative but excision Old unreduced dislocations are the source of veritable nightmare to the practicing surgeon whether he be the beginner or the master, and compared to them ununited fractures pale into nothingness

Besides the trouble in reduction, one is liable to break the bone in the attempt as was done in the case reported This accident has happened to operators many times T S K Morton[3] records two instances, happening on successive days, in which he fractured the neck of the humerus while applying the Kocher method to old dislocations of the shoulder (without previous fracture) Finckh[4] also mentions two cases In one in which the arm was dislocated three months before, the bone was broken by rotatory movements, and in the other, a month old, by forcibly raising the arm Pseudarthrosis was obtained in both with good results Another case is that of Zschock,[5] who, in an attempt to reduce a dislocation of three months' standing fractured the humerus in the vicinity of the head and the patient recovered perfect use of the arm

The second case inculcates the perplexities of diagnosis as nothing else could, emphasizing the fact that so many cases of supposedly simple dislocations at the shoulder are found after being exposed to view, to be complicated by fracture of the neck of the humerus

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[1] Fractures and Dislocations 1866
[2] System of Surg, vol i p 982
[3] Philadelphia Polyclinic Dec 15 1894
[4] Beitr z Klin Chir, 1896 7, xvii
[5] Beitr z Klin Chir, 1904, supplement Heidelberg clinic 1903

Especially is this true of the anatomic neck In this condition accurate diagnosis is at times impossible and, therefore, rational treatment can not be applied with confidence A failure to observe this complication explains the predicament often encountered of a shoulder thought to be restored because there was free movement, when in reality there was the preternatural mobility of a fracture within the joint If this were a new matter one would feel much more as if it were necessary to go further into details

Several important cases are reported in the literature Engle[6] noted the existence of a former fracture at the anatomic neck in the case of a man 54 years old who had a dislocation reduced (?) without anesthesia but whose shoulder had never ceased to give him pain, reduction under narcosis was unsuccessful and an incision was made revealing the condition as expressed above Schuller[7] relates the instance of a woman 81 years of age who sustained a fracture of the scapula (through the glenoid fossa), with some doubt as to whether there was also fracture of the humerus The accident occurred Feb 28 1898, and not until May 1898, was a Roentgen ray picture taken, which showed a fracture of the scapula as specified and, besides this, a healed fracture of the head of the humerus through the anatomic neck

The same conditions may obtain in fractures of the surgical neck, though this particular injury is more readily recognized Finckh[4] mentions a case in which, two years after a luxation of the humerus, the patient complained of pains running from the shoulder downward with a loss of power in the arm and fingers and a weakening of the radial pulse on that side After incision the arm was replaced, when there was discovered a repaired fracture of the surgical neck of the humerus with a considerable callous thickening

That the Roentgen ray is not always reliable is proved by the third case in our series Interpretation of the findings is the important element and this may present as many difficulties as the ordinary examination Other instances are not lacking to show failures of the skiagraphic view In a demonstration of skiagrams of fractures of the upper end of the humerus, Immelmann[8] thus speaks of the question under consideration

> Diagnosis is especially difficult in the case of associated dislocation of the fractured head of the humerus, and correct diagnosis is then possible only when the case comes under immediate observation If there is much swelling and displacement of the fragments, the configuration can not be recognized

A unique case of C B Porter's[9] forcibly impresses the point taken It was a double dislocation of the humerus in which the Roentgen ray showed no evidence of fracture but on a failure to reduce either of the luxations under ether incisions demonstrated fractures of the surgical neck of the humerus in each and good results followed in both

The last case on the list was approached in the light of knowledge just gained from the first three and occurring at such a time gave a favorable opportunity to apply the principles already settled on as a consequence of this experience It had been observed that the obstacles in the way of successful management of these cases were first the uncertainty of diagnosis second the practice of waiting too long before resorting to the so called radical measures and third the fact that damage was done and nothing accomplished by too severe and prolonged manipulations

The case in question was a propitious one The accident had happened but a few hours before, the diagnosis seemed assured and no undue handling of the parts was indulged in The test was sufficiently rigorous, however for the patient was the oldest in the series and had other injuries, while the operation was done in the country at the physician's office and none but the simplest means were at hand for securing aseptic technic The outcome of the case was all that could be wished for

The question spontaneously comes Is it not better to cut down at once, in every case of dislocation at the shoulder-joint associated with fracture of the anatomic or surgical neck of the humerus without subjecting the parts to the traumatism incident to the usually vain endeavors of reduction by the ordinary methods? If the evidence adduced here shall be taken as a guide, this query will be answered in the affirmative An injury of this sort is to be looked on as an emergency needing a surgeon's immediate attention just as an acute appendicitis or a strangulated hernia would be regarded Indeed, the comparison might be pushed further, and it would be proper to place manipulation of the joint under these circumstances on the same footing as taxis in a case of strangulated hernia No modern surgeon thinks it justifiable to use prolonged taxis but opens the canal reduces the hernia and performs a radical cure at the same time So in fracture-dislocation of the shoulder the deduction is forced on us that quicker recoveries better permanent results and fewer deformities will be obtained by the early incision Even in cases of doubt it is preferable to expose the parts to view rather than to wait in the hope that Nature and time will clear it up

REVIEW OF CASES IN THE LITERATURE

Though the literature of this subject is not voluminous there may be seen many instances on record illustrating just the need for enforcing the points developed above Schoch[10] describes the case of a patient who came to him two days after injury with a temporary setting, in which bloodless reduction, in spite of every possible manipulation, proved impracticable The patient was then kept in a recumbent position for two weeks with iced bandages applied to the shoulder A skiagram showed a fracture at the surgical neck of the humerus with dislocation An incision confirmed this diagnosis and the reduction was effected with comparative ease giving a good result after some months It would appear that a more rational plan was to make the skiagram when the patient first came in and then cut down on the joint not waiting for fourteen days to pass In his report Schoch collects from previous writers nine cases in which arthrotomy had been performed all with more or less good effects In the discussion of a paper by Dollinger[11] von Eiselsberg said that "in the complication of dislocation of the shoulder and fracture of the surgical neck of the humerus the surgeon should resort to laying open the injured part by incision, followed by suture and reduction of the dislocation"—a course of treatment that he pursued successfully in one case

McBurney,[12] who has done much to develop the treatment of this condition, has reported two cases of complicated shoulder dislocation one associated with fracture of the anatomic and the other of the surgical neck of the humerus In the first case (1896), seen three weeks after the injury, prolonged manipulation failed, the incision was made, the fragments reduced and adjusted and sutured with catgut At that time he stated that the "open method is not recommended except in cases where proper and harmless methods to reduce by manipulations have been faithfully tried and failed" Seven years later (1903), however, in reporting the second case, in which the patient was referred to him two weeks after the injury, no account of any preliminary manipulation is given, but the incision was made as before, and such perfect apposition was secured that no suturing was deemed necessary Four months later the patient claimed that the arm was as good as before the injury A comparison of these two cases will show that a sounder course is to do a prompt arthrotomy without previous manipulation and that in most instances suturing will not be required

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[6] Arch f Klin Chir 1897 lv
[7] Arch f Orthop 1904 ii 78
[8] Deutsche Med Wochschr Mar 12 1903 82
[9] Boston Med and Surg Jour April 2, 1903.
[10] Beitr z Klin Chir 1900 1 xxix 103
[11] Centrbl f Chir Dec 6 1902 xlix
[12] Ann Surg 1896 xxiii 501 Trans Amer Surg Assn, 1903 xx 323

FREQUENCY

A few estimates have been made on the frequency of the injury under consideration Jones[13] states that out of two hundred complicated dislocations of the shoulder skiagraphed he found sixteen connected with fracture of the surgical neck of the humerus In all the cases the patients were over 30 years, most commonly between the ages of 40 and 50 Dollinger[11] collected nineteen cases of dislocated shoulder in his clinic and three were associated with fracture of the upper extremity of the humerus Finckh[4] places the highest rate of plain shoulder dislocations between the ages of 21 and 30 years, while he reports five cases in which there was also fracture of the humeral neck and the ages of these ranged from 49 to 64 years Apparently, then, the condition occurs more often than many may imagine, and is seen later in life than cases of simple luxation of the shoulder

METHODS OF REDUCTION

In regard to methods of reduction, it may be said that there are no specific directions to be given The difficulties attending replacement, particularly in "old" cases, have been demonstrated and are vividly realized by one who has tried it. There is nothing more unruly than the misplaced head of a bone when its connection with the shaft has been severed Suggestions, however, are now and then offered which may be of service Jones[13] thinks that the dislocation should be reduced at the earliest moment A method which has proved most successful in his experience is the forcible extension of the arm held vertically, with often very hard pushing upward of the fragment He very rightly asserts that, having reduced the dislocation, the fracture is of comparatively little moment Within two years Hamilton had two cases in which he could not effect reduction, though he had the patients under ether (one for over an hour), with the result that the fractures united in both cases promptly, and attempts were subsequently made to reduce the dislocation, but "to no purpose" He states further that "it is quite doubtful whether extension in these cases is of any service"

No one will deny that the average practitioner of medicine, or, indeed, the experienced surgeon, can not easily reduce such a dislocation, but that in the majority of cases he will fail

OPERATIVE TECHNIC

The technic of the open treatment presents less difficulty, granting an ordinary acquaintance with the principles of surgical procedure The incision to be preferred, by all odds, is that beginning at or near the acromial process and passing directly downward through the fibers of the deltoid muscle or between that and the pectoralis major Incisions in any direction over the dislocated head of the humerus are not to be advised as there will surely be trouble in returning the bone into the glenoid cavity In recent cases the luxation rarely fails to be reduced with facility, in longstanding ones, reduction is always troublesome and at times impossible Special instruments are occasionally required Different operators have employed a gimlet, cork-screw, bone forceps or other device

McBurney was probably the first (1896) to use a specially-designed hook, which is inserted into a hole previously drilled into the bone and with which great force can be applied In one case Curtis[14] could not replace the head of the humerus by this instrument, because the bone was too soft and the hook pulled out, so that he divided the capsular bands and, by means of his finger and blunt instruments used as levers, he was finally able to force the head into the glenoid fossa Gaudier[15] speaks of effecting reduction by the aid of a Jacvel hook

DRESSINGS

Having replaced the head of the bone and adjusted the fragment to the shaft, the next step is the retention dressing The ideal case seen and incised early, will hardly ever need suturing or wiring of the bone ends The late cases will sometimes demand this After proper apposition is obtained, some appliance must be put on both to keep the bone in line and to protect the joint The dressing most in vogue on the continent has been the Middeldorp triangle, which is formed of three narrow wooden splints made together as a frame and having its apex in the axilla The sole object of this apparatus is to keep the arm in a position of abduction Such a position may be had in other ways It can be done by applying plaster-of-Paris bandages to the chest and upper extremity so as to hold the arm abducted at an angle of 45 degrees, as used by Judet[16] in three cases

Schuller[7] tells of obviating pressure on the thorax by an "angle-iron" bandage of sodium silicate applied, in his case, to a patient 81 years old The arm in abduction is certainly an important element in the treatment, but one need not feel dependent on any particular form of apparatus A wedge-shaped pad in the axilla and a shoulder cap of plaster-of-Paris put on with a roller bandage will answer every purpose The after-treatment may be summed up in a word by saying that under no circumstances should the fixation-dressing be kept on longer than two weeks and that, of course, massage and passive motion should be begun early

CONCLUSIONS

1 Fracture of the neck of the humerus, complicating dislocation at the shoulder, occurs more frequently than is usually supposed

2 The injury is difficult of diagnosis and often escapes the most careful external observation or even the scrutiny of the skiagraph

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[13] Brit Med Jour, June 16, 1896, 1386

[14] Ann Surg 1896 xxiii 737

[15] Rev de Chir 1904, xxx 800

[16] La Presse Méd, Jan 26, 1907

3 Ordinary expectant methods have produced many useless arms and functionless joints

4 The only rational treatment is to cut down over the joint, reducing the dislocation and setting the fracture at once, immediately after the injury

DISCUSSION

Dr Albert Kocher, Berne, Switzerland, stated that he has seen in his country many cases of fracture of the shoulder joint combined with dislocation He was interested to hear that Dr Royster has seen cases in which the fracture went through the anatomic neck of the humerus, as he has only observed cases where the surgical neck of the bone was fractured combined with dislocation of the shoulder joint As to the etiology of the fracture, he thinks that there must be an injury, especially to the joint, to cause a dislocation and fracture combined of the shoulder and the bone itself That is the experience he has had in these cases Dr Kocher regretted that cases are seen in which the fracture is produced by attempts at reduction of the dislocation, that is to say, when the method of reducing the dislocation advocated by his father, Prof T Kocher, has been tried His present opinion is that an exact diagnosis should be made in dislocation of the shoulder joint as to the place of the dislocation so as to make a good reposition The method is not to be applied to every dislocation of the shoulder The use of the method in a case where it is not applicable, is followed, not infrequently, by a fracture of the surgical neck of the humerus Dr Kocher agreed with the essayist as to the treatment The diagnosis is to be made at once, and operation should follow the diagnosis The Kochers cut down in front of the bone without going through the deltoid muscle, but between the deltoid and pectoral muscles, so as to prevent any muscle injury

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DYSENTERIC ABSCESS OF THE LIVER IN THE PHILIPPINE ISLANDS *

JOHN R McDILL, M D
MANILA, P I

As a complication of intestinal amebiasis, hepatic abscess is the most distinct surgical disease of the tropics It occurs usually in neglected, ulcerative dysenteries of young male adult Americans or Europeans, although amebic dysentery is very common and runs a milder course among Filipinos, Japanese and Eurasians The Chinese are rarely found in our hospitals, and it is believed that their habit of tea drinking and eating cooked foods protects them, to a great extent, from tropical bowel diseases Liver abscess is occasionally found in all these races but the whites furnish over 90 per cent of the cases

Since American occupation, dysentery its cause and its curability have become so generally understood even among the laity, that often on the first appearance of bowel trouble a specimen of the stool is sent for examination and when amebas are found patients submit to rational treatment until cured, and as examination of the stools is routine practice in cases of all kinds amebic disease is now recognized early The result is that abscess of the liver is already becoming more infrequent

Alcoholic excesses are almost always a prominent part of the clinical history The relative infrequency of liver abscess among the exceedingly temperate natives, who are also sparely provided with fatty tissue even in the liver which is normally a most important storehouse of fat, points to overindulgence in drink and food as an important predisposing cause A liver damaged by alcohol in a man with amebic dysentery, as in typhoid and other enteric diseases, is the constant receptacle, through the portal circulation, of quantities of septic matter, intestinal parasites and micro-organisms, acting as a septic vault and filter for the diseased intestine

That large amounts of such materials are disposed of by even the best of livers without abscess formation is one of the most remarkable characteristics of this organ, its inherent ability in this respect is no doubt aided by its most important anatomic feature of having two systems of blood supply

When the intestinal disease is very active and ulcerating, there often occurs an acute parenchymatous, cloudy swelling of the entire liver, creating the general *locus minoris resistentiæ* A septic ameba-laden embolus from the ulcerated colon, of sufficient size to block a portal capillary in such a liver, is probably the only real beginning of an abscess Wonder is that abscesses are not more frequent Amebas and their symbiotic and other bacteria reach the liver through the portal blood stream more or less constantly during an intestinal amebiasis Musgrave and Clegg[1] began publishing in 1904 a work which plainly established that amebas are amenable to changes of environment and that the power of an ameba to propagate under new conditions depends on the similarity between its new environment and its former one and also possibly on its ability to produce lesions in the tissue They have shown this to be true of intestinal infections, and might not the occurrence of liver abscess depend, as they point out, not so much on whether amebas reach the liver but on whether the liver environment had been brought to a condition approaching that of the ameba infected bowel

Musgrave is continuing his government laboratory experiments, also his clinical observations in St Paul's Hospital, Manila, and the importance of the possibility of an explanation of the exact mode of action of amebas in producing pathologic lesions can not be overestimated

The development of an abscess may be exceedingly slow in some cases, and Musgrave has established the fact that an amebic abscess of the liver may exist without discoverable lesions in the bowel at the time of the death of the patient In some of such cases there was a clear history of dysentery months before, in one case no history could be elicited, but Musgrave's conclusion is justifiable, that all cases in which, at autopsy, intestinal lesions were not discernible, the patient had previously had amebic colitis from which amebas reached the liver during the period of bowel ulceration Cases of abscess apparently occurring years after a dysentery are probably of an unnoticed and recent attack, diarrhea is not a constant symptom of amebic dysentery Such cases have also been explained by some as an aroused latency or secondary infection of an old encapsulated and partly resorbed small abscess

LOCATION, SIZE AND NUMBER

Abscesses of the liver vary in size and number from the solitary one, in over 60 per cent of the cases, which may even occupy the entire right lobe, to the multiple, disseminated ones occurring in tens or hundreds and varying in size from a pinhead upward The cases coming to operation have usually been either single or at most two or three in number which coalesced by in-

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* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City, June 1907

[1] Publications Biological Laboratory Bureau of Science Manila P I 1904 xviii, 1

crease in size The right lobe is involved in about 95 per cent of the cases and is usually the only part affected The favorite location in this lobe is its upper segment Abscess of the left lobe has been diagnosed and successfully operated on in one instance in our series of about 100 operative cases, and in February, 1907, a patient with perforation into the lesser peritoneal cavity recovered after operation by Dr F W Dudley, of St Paul's Hospital, Manila Musgrave's postmortem studies show no relation of abscesses to the location of intestinal ulcers, nor is it yet possible to determine the time of development of liver abscesses with reference to the bowel infection

COURSE OF THE DISEASE

In fatal, untreated cases the patients die, without perforation, from sepsis due to mixed bacterial infection which, in turn, hastens the end by aggravating the primary intestinal disease Perforation into the peritoneal cavity and fatal peritonitis is a common termination Spontaneous cure commonly follows perforation into the right pleura or lung or both A pleural or a subdiaphragmatic abscess may open externally anteriorly, and it is possible for cure to follow perforation into the stomach, colon or other hollow viscus but it is very rare Sterile abscesses or abscesses with a mild bacterial admixture may exist a long time without symptoms, may heal entirely or become encapsulated and be only accidentally discovered at autopsy

SYMPTOMS AND DIAGNOSIS

In most cases the clinical picture with a few of the symptoms lead the experienced physician to an early diagnosis, although large symptomless abscesses have been overlooked entirely by the best of observers Fever is usually present, but not characteristic, daily or irregular rigors with rise of temperature and perspiration is very suggestive, but cases have been known to run an afebrile course As an abscess enlarges or approaches the surface of the liver, pain appears and is rarely severe The pain so often complained of in the shoulder is generally found more exactly beneath the right clavicle and usually indicates involvement of the upper and posterior portion of the right lobe When the liver is swollen, pressure beneath the costal arch and over the lower right intercostal spaces is usually painful Sitting, standing or lying on the left side sometimes produces pain The patient is most comfortable on the back

Leucocytosis in rapidly developing abscesses is a constand condition and an important diagnostic aid The primary intestinal disease, which is generally worse during a liver abscess, may alone be responsible for a persistent leucocyte count of 15,000 to 20,000, but this factor can be eliminated to a great extent by colonic irrigations and saline laxatives A persistent and increasing high afternoon count without many other symptoms has come to be regarded as the most positive indicator of pus because the white count drops to near normal about 48 hours after drainage

PHYSICAL SIGNS

The liver usually enlarges and can readily be palpated beneath the costal arch and the area of dulness upward shows the extent of the swelling The fact that the enlargement is often more upward than downward (Osler) is due to the dome of the liver being the favorite site of abscess formation In old and indolent abscesses no swelling may be demonstrable Fluctuation, of course, can never be detected

GENERAL SYMPTOMS

Jaundice and stomach symptoms are not constant but a dry, irritating cough usually means that perforation into the lung is imminent, and even immediate drainage does not always prevent its occurrence Another rare symptom is fatal intestinal hemorrhage, which is never observed in intestinal amebiasis except when complicated by hepatic abscess

Diagnosis is not difficult in marked cases, but symptoms fail and vary so greatly in some that the diagnosis is long in doubt We then depend more on the general appearance of the patient and the clinical picture he presents for a provisional diagnosis, and if the condition is not very serious observation is extended another week or two, by which time a diagnosis can usually be made positive Exploration with a hollow needle and syringe through the abdominal wall or across the pleural cavity is dangerous If such a procedure is decided on, preparation for operation should be made, and if pus is located immediate incision before withdrawing the needle is the only safe plan

The best way to examine a liver for pus is to expose sufficient of its surface to allow of deliberate and efficient exploration, both digital and by needle If pus is not found, pack the wound wide open and explore again every two or three days after adhesions have formed I have not had an opportunity to test the value of the Roentgen rays in diagnosis

TREATMENT BY DRAINAGE THROUGH NEW TRANSPLEURAL ROUTE TO THE LIVER

Unless an abscess is plainly presenting anteriorly, where it is very accessible and in cases with adhesions, operation amounts only to a simple oncotomy, the best access to the greatest area of the liver for purposes of exploration and drainage is by a transpleural route This we accomplish usually avoiding a pneumothorax, by a four-inch partial resection of the tenth rib and, if necessary, the ninth rib in the midaxillary line The muscle wounds necessary to the rib resection are then closed by catgut The result is a loose and movable section of the thoracic wall, which is then pressed inward and held firmly against the diaphragm by the fingers of an assistant in order to prevent pneumothorax The operator meanwhile makes a new incision below and along the upper border of the eleventh rib, at least three inches in length carrying it to the same extent through the diaphragm exposing the liver The two incised edges of the mobilized thoracic wall and diaphragm are then clamped together with two or three forceps, which closes the pleural cavity and prevents the entrance of air The enlargement of the liver upward facilitates this maneuver by narrowing the base of the pleural cavity and giving a good background for the pressure exerted by the assistant to obliterate the pleural space while the operator is going across it Catgut sutures can be quickly substituted for the clamps The right lobe of the liver can now be freely palpated digitally and if the opening is made large enough a small hand can be introduced, this I have never found necessary More room upward can be secured by dividing both walls between clamps first securing what is to be the upper angle by a suture through the entire thickness of both diaphragm and mobilized thoracic wall A few catgut sutures can replace these clamps Sometimes no air enters the pleural cavity when any low transpleural route is followed This can occur when there are no pleuritic adhesions because the liver when greatly enlarged upward will, in some subjects, obliterate the lower part of the pleural space by pressure from within in exactly the same way as we endeavor to do it by external digital pressure The liver, in acute cases is bluish in color, soft and pulpy to the touch, and often bulges freely into the wound The guides to underlying pus are recent parietal adhesions or an area of induration The immediate neighborhood of a liver abscess is hard and resistant, the rest of the organ is very soft When ready to incise or to explore with the needle, pack off with a ring of gauze, perhaps anchoring it to the surface of the liver or parietal layer of peritoneum, open at once directly or by using the needle as a guide If the operator prefers to wait for adhesions, fasten the needle carefully *in situ* or the pus may not be found again, as the liver invariably reduces rapidly in size after needling As soon as possible the local treatment of the primary intestinal lesions must be resumed

CONCLUSIONS

1 Liver abscess as a complication of amebic disease of the colon always has amebas in its wall as the specific pathogenic organism of the disease

2 This complication can be reduced to a minimum by early recognition and proper treatment of the primary intestinal amebiasis

3 Solitary abscesses, which are sometimes formed by confluence of more than one, are the only ones so far, amenable to successful surgical treatment which is by drainage

4 The best route to the liver for exploration and drainage is by transpleural methods, which avoid lung collapse

5 Early operations are most favorable and over 90 per cent of operable cases coming promptly under surgical treatment should recover

6 Most of the fatal operable cases were due to poor surgical judgment before much experience had been acquired

DISCUSSION

Dr Charles A Powers, Denver, considered the description of the operative procedure a good one He asked what attempt, if any, Dr McDill makes to locate secondary abscesses at the time of the original operation On two occasions on which Dr Powers has opened an abscess, the patient has gone on to a speedy death from sepsis At the autopsy other abscesses were found which probably existed at the time of the operation

Dr Harvey Cushing Baltimore, thought that few cases of amebic abscess of the liver have been seen by those present at the meeting, but he thought that in the future more such cases will be seen because now we have come in possession of tropical colonies in which we may expect to get tropical diseases After the campaign in Cuba in 1898, Dr Cushing saw a number of cases of amebic dysentery and liver abscess as a result of the dysentery He asked Dr McDill whether he regards the ameba as a secondary invader, or whether he holds the view of Flexner and others as correct, that the Shiga bacillus is the primary invader, and that the ameba comes next At least, animals inoculated with the bacillus of dysentery in its pure form have the ameba enter as a secondary invader Dr Cushing was very much interested in Dr McDill's description of his ingenious transpleural operation All surgeons, he said, who have had an opportunity to operate on these patients realize how difficult it is to approach these abscesses safely The abscesses he has seen have been large and probably were not seen at as early a stage as were those seen by the surgeons in Manila because these patients come to the surgeon through the medical wards, and there is the usual delay that occurs when cases are on the borderline, as these cases must be considered to be, before they are transferred to the surgical side The fact is, he said, that an abscess high under the dome of the diaphragm is a difficult thing to approach, and, therefore, Dr McDill's operation is a distinct contribution to operative methods The evacuation of one of these abscesses is not an easy thing to do, and sometimes they leak, and this tomato soup full of ameba is an appalling thing, at times The abscess may even be close to the surface, and if evacuated the liver recedes and there is a great chance of the liver becoming infected, though Dr Cushing believes that many of these abscesses contain no organisms other than the protozoa

Dr John R McDill, Manila, P I, replying to Dr Powers with regard to secondary or multiple abscesses, said that they do not concern themselves with that during the operation, unless, with the finger in the opened abscess, they can detect a bulging on the opposite wall If it appears like another abscess it is needled If not found at that time, they find the second abscess later, when it has enlarged If septic conditions persist, a needle is passed through the wound into the liver to find other abscesses Usually, however, such multiple abscesses coalesce and take care of themselves Replying to the question of Dr Cushing, he stated that Dr Musgrave believes that the intestine must be in a certain condition favorable for the growth and development of the non pathogenic into a pathogenic ameba Musgrave believes that there is not more than one kind of ameba, and that the difference in shape, size, etc., is due to environment and symbiosis Dr McDill referred to a specimen of dysentery of the colon which he saw in the pathologic exhibit The patient is said to have presented typical amebic symptoms and a laparotomy was done and suppurating peritonitis found At the autopsy miliary abscesses of the liver were also found There was another specimen of "ulcerative colitis" and one of "dysenteric colitis," but not one word as to the presence or absence of the amebas in the stools He thought that these cases were almost certainly cases of amebic dysentery The ameba, he said, is universal, but causes a more pronounced disease in the tropics than in temperate climates He has found that the routine examination of the stool in every case is of the greatest advantage, and it is surprising how many unsuspected pathogenic parasites, or evidence of them in the shape of ova, are found He advised examining the stools after the administration of a dose of salts, say the third or fourth watery stool The examination of an ordinary passage may be negative for ameba, but if a saline purge is given and the watery part of the stool is examined, the ameba will be found almost invariably when present

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Clinical Notes

TREATMENT OF TETANUS BY INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE

WITH REPORT OF A SUCCESSFUL CASE

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The sodium and calcium salts have been shown to have distinct stimulating properties for some of the functions of the animal organism It occurred to Meltzer that the salts of magnesium, another element found plentifully in tissues, may have an inhibitory action on these same functions This idea was subjected to a large series of experiments by Meltzer and Auer[1] and they have obtained some striking results confirming the correctness of the hypothesis It was found that a certain dose of magnesium sulphate will, when subcutaneously injected, produce a deep, often long-lasting anesthesia with complete relaxation of the voluntary muscles and abolition of some of the less important reflex activities, which anesthesia terminates in recovery. Not a single instance was observed in which that salt produced an increase in excitation and the effect of the salt was invariably in the direction of a reduction of excitation or of its complete temporary or permanent abolition. When injected intravenously the magnesium salt was found to effect the centers in the medulla oblongata. There was depression of the respiratory and deglutition centers but the cardiac mechanism was practically undisturbed. Direct application of the salt to nerve trunks never produced irritation but caused a block for both afferent and efferent stimuli. Washing the magnesium salt away quickly restored the functions of the nerves.

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[1] Am Jour Physiol 1905 xiv 56, 1905 06 xv 387, 1906 xvi 233

After having found that general anesthesia could be produced in monkeys by intraspinal injection of a solution of magnesium sulphate, Meltzer[2] recommended that the salt be used in this manner for the production of surgical anesthesia. He advised the use of one-quarter of the dose used in the animals. This method has been used by himself and Haubold[3] and a few instances of its employment have been reported by others. Blake[4] has collected fourteen cases so treated, several of which were his own, and so gives us a series of cases from which to draw conclusions as to the action of magnesium sulphate when intraspinally injected in human beings. Here it is seen that the action of the salt is identical with the effects on animals described by Meltzer and Auer. Anesthesia and relaxation of the voluntary muscles always occurred, and abdominal operations as well as operations on the lower extremities and perineal region were performed after intraspinal injections of a 25 per cent. solution of magnesium sulphate. One cubic centimeter for about every twenty pounds body weight was used. In some cases small amounts of chloroform were given in addition.

Besides the production of muscular relaxation and anesthesia the tendon reflexes were lost, the respiration was usually slowed and there was as a rule a rise of temperature, which occurred on an average of twenty-two hours after the injection and which varied from 100.6 to 105. Six patients lost consciousness, while there was retention of urine in twelve of the fourteen cases. In but one case was there any disturbance of cardiac rhythm. Of the untoward effects, slowing of respiration was the most serious and sometimes required artificial respiration. Washing out of the spinal canal with normal salt solution however, seemed to relieve this symptom. It can be said, therefore, that in these fourteen cases no permanent harmful effects were seen after intraspinal injections of a 25 per cent. solution of magnesium sulphate.

Meltzer advised the application of his discovery in the treatment of tetanus where such marked nervous excitability occurs and where muscle spasm is so often the cause of death for heart failure or asphyxia during a paroxysm usually produces the fatal termination. In spite of the fact that there is evidence to show that the use of the salt intraspinally is safe in proper doses, and that the present generally used methods of treating tetanus are so inadequate but few cases seem to have been treated by this method, judging by the number found in the literature. I hope to show that the method deserves much wider use and that an extensive series of published cases is very desirable.

Blake reports the first case, a boy weighing 115 pounds, who was admitted to the Roosevelt Hospital on the second day of a typical and severe attack of tetanus. The incubation period was seven days. Antitoxin was at first used without benefit. Magnesium sulphate, 4.5 c.c. of a 25 per cent. solution, was intraspinally injected on the fifth day with excellent results. A general relaxation, including the muscles of the jaws, occurred and the patient was quite comfortable for 33 hours. The symptoms returned, but repeated injections were given on the seventh, ninth, tenth and sixteenth days, and the patient made a complete recovery. Marked relaxation and almost total suspension of symptoms resulted from each injection.

The same author reports a second case in which 1.5 c.c. of the magnesium sulphate solution were injected into the spinal canal of a 4-years old child weighing 44 pounds, who had a very severe tetanus and who died 28 hours after the appearance of the first symptoms. The incubation period was seven days. No effects of the injection were noted.

Logan reports two cases. The first was a boy of 11 years, who had an estimated weight of 80 pounds. Tetanus set in nine days after a blank cartridge wound of the hand. After getting no results from the use of antitetanic serum 4 c.c. of a 25 per cent. solution of magnesium sulphate were injected intraspinally on the second day of the disease. In 40 minutes relaxation was complete and remained so until 13 hours and 45 minutes after the injection, when the rigidity again made its appearance. Respirations became shallow, and a profuse bronchorrhea set in 4 hours and 40 minutes after the injection, but was apparently relieved by atropin. A second injection was given on the third day of illness. Fifty minims of the solution were injected and complete relaxation occurred in 25 minutes but 2¼ hours later a convulsion occurred. After this convulsion muscular relaxation continued, but respiratory difficulties similar to those following the first injection occurred, the temperature rose, the pulse became weak and rapid, and the boy died on the following morning. Ether was given before each injection.

Logan's second case was a woman 24 years old, whose estimated weight was 100 pounds, and in whom the disease set in 17 days after vaccination. The incubation period was probably shorter than this, however. The onset was violent. Four cubic centimeters of the 25 per cent. solution were injected 30 hours after the onset, and again 17½ hours later. No effect was noticed, except a slight increase in time between the convulsions, and the patient died 50 hours after the onset of symptoms.

A fifth case is reported by Franke.[6] A man of 32 years developed tetanus 12 days after an injury to his fingers, and was admitted to the hospital six days later. The case was typical and the patient had convulsions from time to time. The fingers were amputated and 1 c.c. of magnesium sulphate solution was introduced into the spinal canal. This was followed by decrease in convulsions on the following day, but in four days the spasms were severe again and chloral hydrate was administered, but without effect, and on the next day 2 c.c. of the magnesium sulphate solution were injected. About one hour after this injection apnea was noted. Four days later 2 c.c. of the solution were again injected intraspinally. These injections, although small in amount, had a distinctly beneficial influence on the muscular spasms, and the patient made a good recovery.

The case I have to report is as follows, and for the privilege of reporting it I wish to express my gratitude to Dr. Morris J. Lewis.

History.—Boy, aged 11, who said he weighed 70 pounds. He was admitted to the Pennsylvania Hospital in the service of Dr. Morris J. Lewis, May 11, 1907 (No. 399). He complained of stiffness and "rheumatism." On admission his temperature was 99.6, pulse 112, respirations 40. He had been a healthy, active boy, but had had typhoid fever three years before. He had recently played considerably about a stable, but gave no history of any cut or injury as far as he could remember Mother of patient said, however, that she had noticed, while combing the patient s hair, a small swelling on the right side of his head This swelled up considerably and appeared as a small abscess, but did not rupture or ' come to a head "

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[2] Med. Record, 1905, lxviii, 967.
[3] The Journal A. M. A., 1906, xlvi, 647.
[4] Surg., Gynecol. and Obstet., 1906, ii, 541.
[5] The Journal A. M. A., 1906, xlvi, 1502.
[6] Zent. f. innere Med., 1907, xxviii, 545.

The illness began May 1 11 days before admission with slight pain in the jaws Soon after this the jaws became stiff and on the third day after the onset patient was taken to see a doctor, who said the trouble was probably muscular This stiffness increased and on the sixth day patient did not go to school But on the following day he was able to go out and play ball, the stiffness being confined to the jaws The exercise caused profuse sweating and on returning home he had stiffness of the right side, especially affecting the leg On the following day, May 8 general rigidity set in and gradually increased until admitted to the hospital on May 11 At this time he had had abdominal pains for four days They were shooting in character, and came and went quickly He had had nervous spells for several days when he shook a great deal but never lost consciousness Had partial loss of appetite and had been able to take only liquid food No vomiting Bowels moderately constipated Abdominal pain had been the chief complaint but he had a slight cough with expectoration

Note made soon after admission is in part as follows

Patient is a well nourished well developed boy He is entirely rational and intelligent He lies in bed in a remarkably rigid condition The head can not be moved, the jaws are tightly locked and can be moved but a fraction of a centimeter The corners of the mouth are drawn down, the eyes are held partly closed, and the patient has 'risus sardonicus' moderately This is more marked when the features are drawn from time to time on account of sharp attacks of abdominal pain of which he complains The arms can be moved somewhat but are very stiff to both active and passive movements The muscles of the trunk are hard and rigid The back is arched and the lumbar region is about 6 to 8 cm above the surface of the bed The abdomen shows board like rigidity, and the legs are held immovably When one attempts to lift the head the whole body is raised, the patient resting on his heels The knee jerks are so exaggerated that a rapid clonus is produced when the patella tendon is struck No ankle clonus obtained, as the foot can not be moved When the patient lies on his side the upper leg remains extended in the air without support, and not touching the lower leg No cut, abrasion or injury of any kind found Pupils equal and react to light Somewhat contracted There is no apparent facial paralysis No glandular enlargement Chest well formed Respiratory movements slightly exaggerated and rapid Lungs free from râles and apparently normal Heart sounds are rather rapid but of good quality and free from murmurs The rigid abdomen is not especially tender, except when palpation brings on muscular spasms Spleen and liver not enlarged to percussion and not palpable Every few minutes, especially when disturbed, the boy stiffens himself perceptibly and there are muscular twitchings At these times he usually moans quietly and complains of pain in his abdomen "

Diagnosis—The diagnosis of tetanus was made, and on the afternoon of the day of admission, the eleventh day of disease, the first injection of magnesium sulphate was performed

Treatment—At 3 p m patient was given a small amount of ethyl chlorid as a general anesthetic, but after its use for less than one minute he had a violent spasm, especially affecting the muscles of respiration He became extremely cyanosed and of a dark purple color He was revived finally by artificial respiration, but no more ethyl chlorid was given Lumbar puncture was then done in the lower lumbar region and clear, watery cerebrospinal fluid rose in the manometer 235 mm About 8 c.c. were withdrawn, when the cerebrospinal fluid rose to 130 mm in the manometer Three cubic centimeters of a 25 per cent solution of magnesium sulphate were then fairly rapidly injected, and the needle withdrawn In five minutes after the injection the neck was less rigid In one hour there was distinct relaxation of the muscles, and at 5 30 p m., two and one-half hours after the injection, a remarkable change was seen The boy was drowsy, his neck could be freely moved, his jaws could be separated about 1 5 cm , the abdomen was soft, the legs and arms were relaxed, and no knee-jerks could be obtained There was no apparent anesthetic effect The boy seemed in excellent condition, and was comfortable except for a slight headache Between 9 p m and 1 a m the patient regained some of his former rigidity, and when seen at the latter hour, ten hours after the injection, his abdomen, neck, and legs were rigid, but not so markedly so as at the time of admission His jaws could be parted somewhat On the morning of the twelfth day, 18 hours after the injection, the rigidity had almost reached the extent on admission, there was a return of spasmodic contractions, and a moderate rise in temperature

The patient's mother was seen on this day for the first time, and she described the lesion of the scalp mentioned above On examining the scalp there was found a small raised, slightly swollen area, about 1 cm in diameter, and slightly boggy on pressure

On the evening of the twelfth day the second magnesium sulphate injection was given At 10 30 p m lumbar puncture was performed Only one or two drops of spinal fluid were obtained which did not seem to be under any pressure Three and a half c c of the 25 per cent solution were injected. At 11 p m the neck was less rigid and knees could be flexed slightly Patient felt drowsy and more comfortable Relaxation did not occur until 12 15 p m , 1¾ hours after the injection, and then it was fairly complete, but knee clonus could still be obtained

On attempting to excise the swollen area in scalp, patient complained of pain, so the area was infiltrated with Schleich's solution It was excised with practically no pain, although several bleeding points were clamped The area was carbolized with pure carbolic acid, treated with alcohol, packed with iodoform gauze, and a wet bichlorid of mercury dressing applied The area excised was examined in the Ayer Clinical Laboratory No tetanus bacilli were found in either smears or in sections The tissue contained a subacute abscess

On the thirteenth day of the illness at 8 a m , 9½ hours after the second injection, the patient was bright and comfortable His abdomen and legs were distinctly relaxed, but some rigidity remained He slept well during the night after the operation, but complained of great thirst and drank much water and milk During the fourteenth day the patient remained less rigid, and he could flex his knees voluntarily The knee jerks were less marked than at the time of admission, he had no convulsions, and but little pain in his knees and in his abdomen

On the fifteenth day the heart and lungs were in good condition During the day the rigidity gradually increased, and by night it was very marked Lumbar puncture was done at 8 15 p m The spinal fluid rose 160 mm in the manometer About 3 c.c were withdrawn and 4 c c of the magnesium sulphate solution were injected rapidly At 8 20 p m no effect noted, but at 8 35 p m legs were distinctly relaxed, knee jerks exaggerated, but no clonus present Abdomen distinctly softer, and patient was sleeping with his knees drawn up At 9 20 p m , one hour after the injection, he could turn himself readily from side to side, and at 10 p m he was almost perfectly relaxed, except for his jaws His teeth could be separated about 1 cm , however, and he felt comfortable and drowsy Knee jerks could not be obtained, although the neck was a little rigid Patient was everywhere very sensitive to the stick of a pin At 10 50 p m he complained of slight headache and some pain in his feet At 3 a m of the sixteenth day, 7 hours after the injection, the rectal temperature was 103 At 5 a m the neck seemed a little stiffer, otherwise the relaxation was excellent while at 10 a m , the abdomen was somewhat tense but the legs were moved freely, the jaws could be separated 1 5 cm the face was relaxed, and the boy had a distinctly improved expression At 11 30 a m abdomen was more tense, clonus obtained in knees and general relaxation was less This was 15 hours after the injection Bronchial râles heard in chest

On the following day the seventeenth, there was moderate rigidity but somewhat less than on the day before, and dis tinctly less than before the last injection of magnesium sulphate. Patient was comfortable and he had no more spasms. The rigidity never increased after this time, but gradually diminished. He had been sweating very profusely and there had been no retention of urine. He continued to complain of much thirst and drank large amounts of milk. On the eighteenth day the temperature was lower, the heart beat was regular but a little rapid, no murmurs heard, but a few coarse râles heard in chest. From the eighteenth to the twenty-second day the patient showed slow but definite improvement.

On the twenty-second day, seven days after the last injection of magnesium sulphate, the temperature, which had varied between 99 and 100 for several days, began to rise rather rapidly, and on the morning of the twenty-fourth day it reached 106.4. Coarse bronchial râles were heard in the chest, but otherwise the physical examination was negative. The scalp wound appeared clean, and nothing to account for the rise of temperature could be found. It quickly subsided on the following day, and reached normal, not to rise again. After this the improvement was marked and the rigidity gradually disappeared, the boy making a perfect recovery. At the time of his discharge, June 28, 1907, on the fifty-ninth day of his illness, the knee jerks were still somewhat exaggerated, and the gait was slightly awkward.

Blood.—Leucocyte count was 10,750 per cubic mm. at time of admission, but was 16,700 two days later, the highest count obtained. On the twenty-seventh day after the marked rise in temperature the count was 6,300. Widal reaction negative. No leucocytosis later.

Urine.—A faint trace of albumin and a few hyaline casts were found, practically throughout the illness, and on the fiftieth day a few pale granular casts, but no albumin were found.

Besides the use of magnesium sulphate in the treatment, sodium bromid, 1 dram, and chloral hydrate, 30 grains, in twenty-four hours, were used during the first two weeks. Bromids were given throughout the illness, and a few doses of morphin, 1/8 of a grain, were employed hypodermically. The boy weighed 65½ pounds on the forty-sixth day, but weighed 70 pounds when discharged two weeks later.

COMMENTS

Although no tetanus bacilli were isolated, the case was certainly one of tetanus. The symptoms were severe and were apparently becoming worse when the magnesium sulphate was used. The indefinite incubation period, the somewhat uncertain portal of entry, and the gradual onset of symptoms make it difficult to judge as to the real severity of the infection. The patient might have recovered without the use of the magnesium sulphate solution. But this is certain: the intraspinal injection of the salt did produce practically complete abolition of very severe symptoms for a number of hours. The suffering of the patient was greatly reduced and, although the operation of lumbar puncture must have been very painful, the boy asked to have it done again some hours after the first injection, when the symptoms were returning. The muscular rigidity was never as severe after each injection as it had been before it.

The dose was first 1 c.c. per 23 pounds, then 1 c.c. per 20 pounds, and finally 1 c.c. per 17.5 pounds. These doses are about the same as used in the cases on which surgical operations were performed, but the effect here was distinctly different. Although the patient was slightly drowsy, and this may have been from fatigue, nothing approaching loss of consciousness was noticed. There was no retention of urine, and, indeed, although micturition was usually involuntary and the amount could not be measured, the flow of urine seemed copious. The respirations were never even reduced to normal. After the first injection they fell from 36 to 32 per minute, and after the third from 40 to 32 per minute, but they remained at 48 after the second injection. In spite of this, however, the observations of others should caution users of intraspinal injections of magnesium sulphate to be prepared to meet failures of respiration. Means for performing artificial respiration should be at hand, and the spinal canal should be washed out with normal salt solution if failure of respiration demands it.

The changes in sensation were not carefully studied. After the first injection the feeling to the touch of the finger and to pinching of the skin seemed unimpaired. The scalp was not sufficiently anesthetic after the second injection to allow of excision of the swollen area, but the impression was given that the lack of pain produced by the operation was not wholly due to the use of the Schleich's fluid. After the third injection the boy was sensitive to the pin prick everywhere, but Dr. Meltzer says that there may be a disassociation of the various sense qualities, and that he has often found complete analgesia with the normal sense of pressure. Although there may be sensations to the prick of a pin, the pin may be stuck through the skin or the skin cut without pain. This being the case, my observations in this particular are of little value.

The only untoward effect noticed was slight headache after the first and third injections. There was a moderate rise of temperature coming on after the first injection. The fever was increased slightly four hours after the third injection, but not affected by the second one. The extremely high rise of temperature which occurred eight days after the last injection of magnesium sulphate can hardly be attributed to the salt, although I can offer no explanation for it. The marked thirst and profuse sweating did not seem to have any relation to the use of the salt. No purgative action was produced by the injections and, in fact, the bowels were very constipated. Castor oil and enemata were but weakly effectual during the early part of the illness. This observation is in accord with the findings of Meltzer and Auer,[7] who report that the effects of certain drugs and maneuvers which produce peristaltic contractions in the intestine can be counteracted by intravenous injections of magnesium sulphate, which do not embarrass the respiration.

It would seem probable that the solution of magnesium sulphate is *distinctly better tolerated when intraspinally injected* in persons suffering from tetanus than in individuals without the disease. As Dr. Meltzer suggests, a larger dose might be used. In the last contribution to the subject of the action of the salt Meltzer and Auer[8] have shown that in rabbits nephrectomy greatly increases the toxicity of magnesium sulphate, and that probably at least 50 per cent. of the salt is excreted by the kidneys. Therefore, in cases in which renal insufficiency is known to exist or is suspected the salt should be used with more caution.

In conclusion, I plead for a more extensive use of this method of treatment in tetanus, and urge that all cases, whether successful or not, be reported. I am sure that, in at least some cases of this terrible disease Meltzer has suggested a remarkably beneficial method of treatment. Further study only can show its limitations and its worth. The treatment is probably only symptomatic, but so far specific serum therapy has been but of little value in well developed cases. Even if other methods are being employed, the intraspinal injections of magnesium sulphate may serve to relieve great suffering and may prove a life-saving measure.

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[7] Am. Jour. Physiol., 1906, xvii, 313.

[8] Jour. Exp. Med., 1907, ix, 298.

HEMORRHAGE AFTER TONSILLECTOMY *

OSCAR WILKINSON, A M, M D
WASHINGTON, D C

The infrequency of hemorrhage after tonsillectomy justifies me in reporting two recent cases

CASE 1—Mrs S came to me suffering with a follicular tonsillitis, with a history of frequent attacks of a similar kind On examination I found the right tonsil very much more affected than the left, lying embedded between the tonsillar folds, to which it was slightly attached It had a number of follicular cavities which were filled with a cheesy, offensive débris As soon as the irritation had been relieved I advised her to have the tonsil removed as a preventive of future attacks The tonsil being small, it was easily raised from its bed with a pair of forceps I seized it with a pair of forceps running through the ring of Mathew's tonsillotome, drew it through the opening and thus excised it The tonsil was all removed and there was a slight peeling of the tonsillar pillars The hemorrhage at first was not excessive, but it failed to stop as readily as is usual in such cases I made a local application of adrenalin, 1 to 1,000, which afforded some relief

Having an engagement in Virginia at that hour I was compelled to leave the patient with an assistant, with instructions to spray the tonsillar cavity with peroxid of hydrogen if the hemorrhage continued and if this failed, to use compresses saturated in tannic acid and glycerin I returned from Virginia in about an hour and found the patient almost completely exsanguinated The doctor had used adrenalin locally without effect had sprayed the tonsillar cavity with hydrogen peroxid and had used compresses saturated in tannic acid and glycerin This latter remedy had given temporary relief forming a clot which, however, would soon be pushed off by the hemorrhage from beneath On examining the cavity carefully I saw that the hemorrhage oozed from the entire cut surface I applied stiptic collodion without effect. I then resorted to Monsell's solution, which gave temporary relief, but within half an hour the clot became loose and the patient vomited about a pint of blood, and was very weak Realizing that some more radical method must be attempted, I threaded a half curved eye needle with a black silk thread and passing this needle through the posterior tonsillar pillar and out through the anterior tonsillar pillar was able, with the assistance of Dr Stevenson, to draw the needle through I then packed the tonsillar cavity behind this thread with a piece of cotton saturated in tannic acid and glycerin I drew this thread tight, drawing the tonsillar pillars entirely together The hemorrhage ceased and the patient had an uneventful recovery

CASE 2—Two weeks after my experience with the previous case I operated on Mrs M, removing her left tonsil which was a rather small one of the follicular variety In this case the hemorrhage stopped within a reasonable length of time The patient walked home, a distance of six blocks and as she entered the house her throat began to bleed She attempted to check it by the use of ice gargles and hot solutions, but without success I was called after she had been bleeding from two to two and one half hours, and found her almost bloodless, being very weak and faint I administered stimulants, gave adrenalin internally and applied it locally without avail I used styptic collodion without results I ordered a carriage and had her brought to my office Immediately before leaving the house she vomited a considerable quantity of blood and was practically carried to the carriage By the time she reached my office the hemorrhage had ceased and I had no further trouble with this case

While I am an ardent advocate of the entire removal of diseased tonsillar tissue, my experience leads me to believe that we are more apt to have hemorrhage with our more radical operative procedures The good results obtained justify complete removal and with better instruments we are able to cope with the excessive hemorrhage when it does occur I am aware that a different opinion has been expressed by good men, but these two cases of severe hemorrhage, and a similar one which I reported in the *Baltimore Eye, Ear and Throat Journal* in 1905, have all occurred in patients in whom a thorough tonsillectomy had been done I have had made by the McKee Instrument Company a long-handled half-curved needle with the eye in its point for use in such cases as described above

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*Read before the Fairfax County (Va) Medical Society June

UTERUS FORCEPS

GEORGE B SOMERS, M D
SAN FRANCISCO

In operating on the female pelvic organs through an abdominal incision, it is often necessary to grasp the uterus for the purpose of fixing holding or elevating it

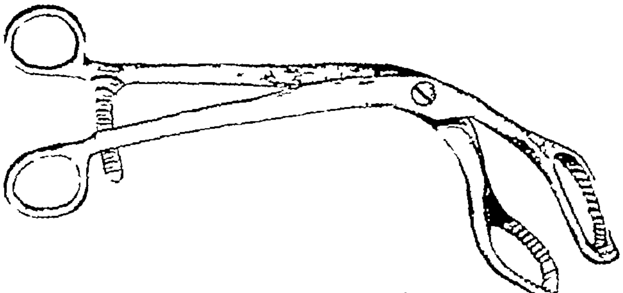

Fig 1—Modified uterus forceps

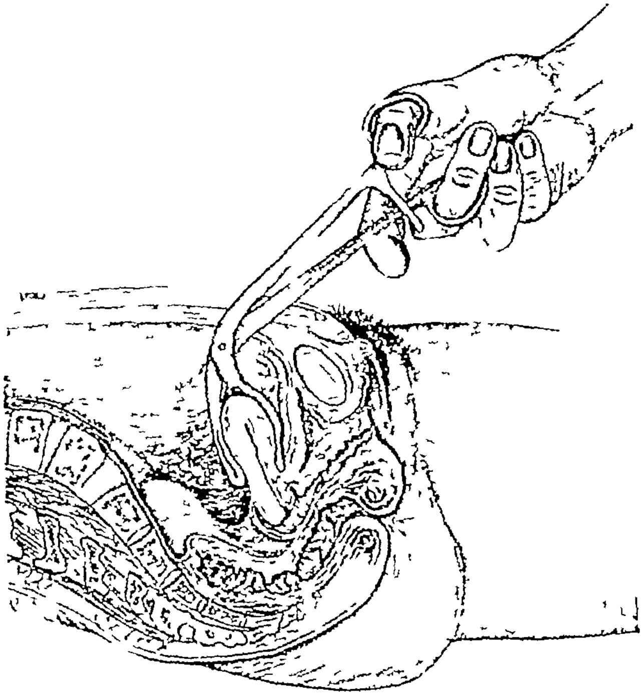

Fig 2—Uterus forceps applied

The instruments commonly used are vulsella, which often lacerate the fundus so severely as to produce troublesome hemorrhage and cause a waste of time in repairing the injuries

The only instrument that I know of, devised to hold the fundus without injuring it, is one described several years ago by Cullen of Baltimore I found his instrument inadequate, as it does not grasp firmly enough and allows the uterus to slip To hold the fundus firmly and with the least possible injury I designed the instrument whose appearance and use are sufficiently shown by the accompanying cuts

It is needless to say that its chief use is in conservative work Where a hysterectomy is to be performed, the injuries produced by vulsella may be disregarded

THE JOURNAL OF THE
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SATURDAY, AUGUST 10, 1907

THE BRITISH MEDICAL ASSOCIATION ADDRESSES

Suggestive food for thought is found in the addresses before the British Medical Association which met last week at Exeter Advance copies of the addresses have been sent us through the courtesy of the editor of the *British Medical Journal,* and we regret that we can not give them in full or quote from them at length

The main motive in the address of the president, Dr Henry Davy is the national importance of the health and the physical culture of the citizen He points out that modern civilization with all its labor-saving appliances, has a tendency toward physical deterioration which it behooves the medical profession to consider He calls attention to recent progress in this direction made in Japan, where physical exercises form an important part of the national system of public education, and its effects as shown in the statistics of military conscription It would appear from these that there has been a very perceptible effect in improving the stature of the Japanese even within the short time since the reforms were adopted and that their results were likewise shown in the hitherto unparalleled freedom from disease of the Japanese soldiers in their late war In England, as in this country to a considerable extent, there is a tendency to make athletics a profession of the few, while among the mass of the people many of the manly physical exercises, once so popular, have become almost extinct

In the address in surgery Mr H T Butlin, the well-known British authority on morbid growths discusses the question of the communicability of cancer and finds what he considers sufficient evidence of the actual autoinoculation of cancer which meets the conditions laid down by him viz that the assumed inoculation should be of the same variety of cancer as that from which the contagion has been derived and that there should be actual occasional contact to afford the opportunity for contagion He admits that, while the evidence is sufficiently conclusive to him, his belief in the parasitic nature of cancer predisposes him to the belief that the disease is capable of autoinoculation Furthermore his study of the subject has so far altered his views that, while he formerly held that a broken surface was essential to successful autoinoculation he is now inclined rather to believe it helpful but not necessarily essential, and that cancer can be communicated to a skin or mucous surface without abrasion At present he is investigating the question of heteroinoculation in the human subject The most probable condition of its occurrence would be in coition, and cases of coition cancer have been reported Such occurrences, however he thinks must be extremely rare, as the existence of ulcerated cancer in the male would probably deter him from the act, and in both male and female sepsis would be a bar Moreover, it would be less likely to occur than autoinoculation, for the reason of the varying susceptibility of the individuals A person having already a cancer may be assumed to be predisposed to the contagion, while a healthy individual may be extremely resistant A practical point which he mentions is the importance of thorough disinfection of instruments used in cancer operations and the necessity of the avoidance of exposure of other surfaces to cancerous tissues

The most suggestive of the three addresses however, is that of Dr W Hale White entitled "A Plea for Accuracy of Thought in Medicine" The criticisms he makes are not all new, but he puts them in a way that should attract to them some attention Too many medical men are susceptible to what he calls the "Mesopotamia-like soothing power of words" irrespective of their meaning, and most of us incur the temptation of sometimes using words to cover our ignorance We are too often afraid, he says to say we do not know All human beings desire to find explanations, but wrong explanations, or the substitution of words, while they may be satisfactory to the questioner are often worse in their effects than no explanation at all He gives as examples of these tendencies the uric acid theory, the term "selective action" —so often used but which means so little—and the tendency to overwork certain theories that have a temporary vogue Thus he thinks that, while we may not have considered the condition of the heart muscle sufficiently in the past we are at present in danger of believing disease of the cardiac muscle to be present where it does not exist The orthodiagraph will, he thinks, teach us that we have frequently been in error when we thought the heart altered in size, just as the clinical use of the manometer has taught us the inaccuracy of the estimation of arterial tension by the finger While we may make a diagnosis, he insists, of a disease of which we do not know the cause, we should not make a diagnosis implying a cause unless we have grounds from experience for prophesying what will be found at a postmortem examination made with all modern aids of histology, bacteriology and chemistry if the patient died then and there

We also err because we make excursions too often into sciences in which our training is inadequate and he instances here the science of statistics and its misapplication in estimating the value of surgical and other methods etc Even life insurance statistics compiled by actuaries are not always free from fallacies, and White refers to many of the papers written on the subject of the inheritance of tuberculosis as specially good illustrations of the extreme difficulty of medical statistical problems and the errors in their treatment During the past few years the opinion has been commonly expressed that tuberculosis is not hereditary and that the children of tuberculous parents are in no greater danger than those of others Professor Karl Pearson has recently published a paper in which he states that the inheritance of a special liability to tuberculous infection plays a very important part White's plea is that medical men should not draw conclusions from statistics requiring a special training in figures unless they can obtain the help of those who have that special training

Another hindrance to the advance of medical knowledge which he points out is the unreflecting adhesion to authority He would say to all but the youngest students "Accept nothing on authority, but look for yourselves and see if the usual teaching is true, believe nothing you do not see, be skeptical about everything you are told" This may seem like extreme advice, but it is to be remembered that it is addressed to investigators and applies to their own field of research We all realize that, until we are competent to enter a certain field—say, for example, astronomy or Egyptology—and dig out facts for ourselves, we must, at least tentatively, accept the conclusions of those who by toilsome research have earned the right to speak with authority But in one's own field the tendency to implicit and lazy following of authority is perhaps the greatest menace to medical progress Mr White's call for a healthy skepticism is timely and wholesome

THE PATHOGENESIS OF DIABETES INSIPIDUS

This condition has, in common with diabetes, only the polyuria, and, although cases have been observed in which, after a time, glycosuria developed, yet with most of the typical cases the name diabetes insipidus is a misleading misnomer At one time the view was advanced that the polyuria is secondary to a chronic polydipsia, and cases have been reported in which this condition seems to have existed, but these cases are of an atypical, transient form, dependent on neuroses and quite distinct from the typical persistent form of the disease Strubell found that in the typical cases a rise in the concentration of the blood soon follows a brief period of thirst, showing that the excessive renal secretion is not dependent on an excessive amount of liquid in the blood, as is the case in polyuria resulting from polydipsia This and other observations have led to the view now prevailing that diabetes insipidus depends on a functional abnormality in the kidneys, which is not the sequel of any evident structural alteration, but rather depends on some change in either the vascular or nervous mechanism of the kidney In many instances there is definite evidence of nervous involvement as in two cases studied by Seiler in which the disease followed fracture of the base of the skull and it may be recalled that Claude Bernard, in his classical experiments on experimental glycosuria, found that lesions of the medulla might be followed by polyuria without glycosuria There are many cases, however, in which *no central nervous lesions* can be demonstrated, and some in which hereditary influences bear a part

According to many observers, the increased flow of urine depends ultimately on a dilatation of the renal vessels, unaccompanied by general rise in arterial pressure, presumably this vasodilatation is the result of the primary nervous lesions, for a similar condition of polyuria is said to be produced in animals by cutting the renal nerves R Schmidt[1] believes it possible to modify the course of the disease by reducing this renal hyperemia through artificial hyperemia of other vascular regions, e g, catharsis in cases with obstipation, and external heat or diaphoretics in patients with dry skins Spaether[2] also considers diabetes insipidus to be the result of a paresis of the renal vasomotor nerves, of either central or peripheral origin, and he explains the favorable results which sometimes follow the method of treatment by strychnin injections advocated by Feilchenfeld, as due to stimulation of this nerve plexus

Studies of the conditions of metabolism in this disease seem to prove that it is not the cause or the result of metabolic disturbances, but apparently depends exclusively on secretory abnormalities Tallqvist[3] made the interesting observation that variations in the amount of nitrogenous food cause a corresponding variation in the amount of urinary secretion, so that the proportion of urea in the urine remains practically constant, the same change followed variations in the amount of sodium chlorid in the food A Wolf found that the reverse is also true, namely, a reduction in the quantity of the urinary secretion by any means leads to an equal reduction in the amount of urea excreted, the proportion remaining constant These results are confirmed in a careful study from Sahli's clinic by F Seiler,[4] who found that ingestion of large quantities of nitrogenous food is not followed by a rise in the specific gravity of the urine, as is the case with normal individuals Apparently in diabetes insipidus the kidneys can not excrete urine containing nearly so large a proportion of solids as normal urine, therefore, the total excretion of solids can reach the normal only when a sufficiently large quantity of water reaches the kidneys to carry out all the accumulating solids of the blood Should there not be sufficient water to accomplish this, the concentration of solids in the blood will increase, leading to the sensation of thirst which causes the characteristic polydipsia and polyuria of the disease Seiler suggests that the polyuria of chronic interstitial nephritis similarly may depend on the sensation of thirst produced by increase in the concentration of the blood due to retained solids In diabetes insipidus, however, uremia does not follow, because there are no renal lesions to prevent the polyuria being sufficient to remove all excess urinary solids from the blood. Just why the kidney is unable to secrete a normally concentrated urine in diabetes insipidus Seiler does not attempt to explain, beyond ascribing it to nervous defects. He does not believe the view held by Tallqvist that there is a failure of resorption of water from the tubules, can be the correct explanation.

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[1] Wien klin Wochschr 1905 xviii, p 1112
[2] Berl klin Wochschr 1906 No 30
[3] Zeit. f klin Med., 1903 xlix p 181
[4] Zeit f klin Med 1907 lxi p 1

As to therapeutics, Seiler believes that the practice of restricting the amount of fluid taken by the patient should not be carried too far, as retention of solids will result with all its evil effects. The mere reduction in quantity of urine is not a desirable result when there is not a corresponding increase in specific gravity, for otherwise retention of solids must be taking place. In some mild cases in which the primary nervous disorder is either transitory or purely functional, reduction in the amount of fluid ingested, together with such nervous stimulants as strychnin or vasoconstrictors, such as ergot, may lead to improvement or recovery, but it is imperative that the amount of urinary solids must remain normal as the polyuria decreases. Attempts made by Seiler to improve the function of the kidney by diuretics did not give favorable results.

THE RELATIVE PREVALENCE OF DISEASE AMONG WHITE AND COLORED TROOPS

In view of the questioned expediency of retaining in service colored troops in opposition to the sentiment in so many localities against having them in the local garrison, it becomes interesting to compare the relative efficiency of the white and colored troops as affected by disease. For troops serving in the United States proper, a study of the statistics for many years shows that the colored troops almost uniformly have a much lower admission discharge and non-effective rate for disease, while their death rate is much higher than that of the whites, usually more than twice as great. Suicide is also very much more common among white troops, but, on the other hand homicide is not nearly so frequent. As causes of non-effectiveness the diseases which are of more importance among white troops are alcoholism and venereal diseases typhoid fever malaria, diarrhea, dysentery and catarrhal diseases of the respiratory system. But colored troops are greater sufferers from rheumatism in all its forms tuberculosis, pneumonia hemorrhoids and other diseases of the circulatory system frostbite and freezing. The death rate from tuberculosis pneumonia and aneurism is many times greater among the colored troops than among the whites. The colored troops appear to be particularly well adapted to service in the tropics, though their admission rate here is a little larger than for white troops all other rates are lower. The death rate, which in the United States is twice as great as that of the whites in the tropics is considerably less than that of the latter. The rates for the special tropical diseases such as dysentery and malaria are considerably lower in the colored race.

STERILITY AMONG X-RAY WORKERS

The dangers attending the continuous use of the x-ray, and especially the dangers which menace the operator, are not yet fully appreciated. Jordan[1] claims that any man who works daily with the ray for a year or two, even if he takes reasonable care, becomes sterile. By reasonable care this observer means the keeping of the x-ray apparatus in a protected box the use of a protective shield for the tube, the wearing by the operator of a protective apron and keeping at a distance of several yards from the direct ray. This being the case, it seems certain that the ordinary operator of the x-ray in this country has been protected in a very inadequate manner. So far as we know, statistics regarding the sterility of x-ray workers have not been collected. It would be of interest to gather such figures, and it would also be of interest to determine whether operators who give up the x-ray work recover from their sterility. This is a point which has never been settled. In the meantime every x-ray worker, even the practitioner who occasionally uses the x-ray for diagnostic or therapeutic purposes, should bear this danger in mind and take protective steps. The protection of the tube so far as is possible, the use of a strongly protective apron, and the interposition between the operator and the ray of screens guarded by heavy sheet lead should be carried out in every instance.

RENAL CALCULUS AFTER TYPHOID FEVER.

The relation between biliary calculi and bacteria is now firmly established and has gained a strong hold on the minds of the profession in general. The frequency with which typhoid fever is found to have preceded gallstone formation is also clear, and the isolation of *Bacillus typhosus* from the bile of patients with cholelithiasis is common. The origin of renal calculi is not at present so satisfactorily explained, though for some time there have been observers who have claimed that these also are of bacterial origin. There is some evidence that this may be the case. Graves[2] has recently recorded the history of a patient who, six years after an attack of typhoid fever had symptoms of stone in the left kidney. Operation showed a phosphatic calculus in the ureter, and the *Bacillus typhosus* was obtained from the kidney pelvis in pure culture. The patient had had no renal symptoms whatever before his attack of typhoid fever. Such a case as this certainly suggests a connection between typhoid fever and renal calculi, but it is not wise to generalize from a single case. Observations along this line must be repeated, for, when we consider the frequency with which the *Bacillus typhosus* is excreted through the kidneys it would seem strange if it is the cause of kidney stones that these do not occur more frequently after typhoid fever. It may be that in the kidney, as in the gall bladder it is not the sole cause but one of several causes, and that besides its presence there must be some predisposing factor perhaps partial stagnation of urine in the pelvis of the kidney.

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[1] Brit. Med. Jour., July 6, 1907.
[2] Brit. Med. Jour., July 13, 1907.

Medical News

ALASKA.

Smallpox Epidemic.—Passed Assistant Surgeon Hobdy, U S P H and M H Service in charge of Angel Island Quarantine, Cal reports an epidemic of smallpox at St Michael's, and in other places along the coast of Alaska He has issued orders to the boarding officers to inspect vessels from all ports in Alaska

COLORADO

Pardoned—The State Board of Pardons has commuted the sentence of Dr Carrie L Johnson, Pueblo, who has been serving an indeterminate sentence on account of malpractice

June Deaths—During June 851 deaths were reported equivalent to an annual death rate per 1,000 of 16 68 There were 26 deaths from scarlet fever, 11 from typhoid fever, and 6 from diphtheria during the last month

Mennonite Sanitarium.—The Mennonite Sanitarium Association has commenced the construction of a large sanitarium for tuberculosis on its farm four miles west of La Junta to contain 40 rooms and to cost about $50,000

Infectious Diseases—During June there were reported to the State Board of Health 325 cases of scarlet fever, 116 cases of smallpox, 64 cases of typhoid fever, and 11 of diphtheria As compared with the previous month, June shows a decrease of 24 cases of diphtheria, 105 cases of scarlet fever, and 42 cases of smallpox, and an increase of 38 cases of typhoid fever ——There are said to be 75 cases of typhoid fever in La Junta

Exonerate Physicians—The Larimer County Medical Association at a meeting held July 4 to investigate a rumor concerning a criminal operation in Fort Collins, has authorized the following statement

> The Larimer County Medical Society after a full and careful examination of all witnesses and a thorough investigation of all the facts about the case reported in the local papers has found that no physician of Fort Collins was guilty of any criminal action in connection with the case, and in the opinion of the society each and all are hereby absolved from any blame whatsoever Issued by order of the society E Stuver Secretary

DISTRICT OF COLUMBIA.

Personal.—Dr J Russell Verbrycke has resigned as interne at Garfield Hospital and has accepted a position as resident physician at Mount Sinai Hospital, New York City ——Dr Murray G Motter has resigned as chief inspector and deputy health officer of the district, and sailed from New York for Europe, July 20 ——Dr Joseph D Rogers has been appointed substitute physician to the poor of the district, vice Dr Richard S Blackburn

ILLINOIS

Many Insane Before the Courts—The county physician of Cook County states that the insane court passed on 180 patients during July, the largest number on record

Physician Acquitted—Dr Robert Emery Peoria indicted for murder in the case of the death of Pauline Schneider, who is said to have died after a criminal operation, was acquitted by the jury, July 9

Smallpox.—A number of cases of smallpox have occurred at Mechanicsburg since the first of July and an inspector of the State Board of Health has gone to the village to confer with the local authorities regarding quarantine ——The secretary of the State Board of Health has issued a circular letter regarding the continued spread of smallpox throughout the state, and with it has sent a poster urging the importance of vaccination as a preventive of the disease

Insane in State Hospitals—The first step toward removing the insane from county almshouses by redistricting the state into six districts has been taken The institution at Bartonville has been changed from a hospital for the incurably insane to a district hospital thus giving a new district After September 2 new cases will be sent to the hospital for the district in which the patient resides By this ruling the State Board of Charities hopes to avoid peril confusion and expense

Personal.—Dr John R Trott, Virden, has retired from active practice ——Dr Levi W Carter, Peoria who has been ill for several months, has been taken to the Proctor Home ——Dr Fred S O'Hara Springfield has been elected state president of the Order of Eagles ——Dr Clarence R Bell, Thayer, has been appointed physician at the Government Insane Asylum Washington ——Dr J F Duane Peoria has returned from Europe ——Dr Stephen C Glidden Danville has been appointed chief surgeon of the hospital system of the Illinois Traction System ——Dr Walter W Greaves La Salle who was operated on for appendicitis at St Mary's Hospital, July 26, is reported to be convalescent ——Dr Nicholas Senn who left Chicago July 6, is making a tour of circumnavigation of South America and will return early in October

Civil Service Medical Positions—The secretary of the Illinois Civil Service Commission announces that the following individuals have passed the examination recently conducted by the commission, and are eligible for appointment Dr Henry W Miller, Dunning, director of State Psychopathic Institute, assistant physicians, Drs Fred B Clarke, Elgin, Emil Z Levithin, Chicago, Harriet Hook, Lincoln, E Louis Abbott, Anna, Richard F Windsor Hospital, Angelina G Hamilton, Ann Arbor, Mich , Rachel A Watkins, Peoria, Edward A Foley Woodstock and Cyrus H Anderson, McLeansboro, and first assistant physicians, Drs Robert B Hough, Lincoln, and Eugene Cohn, Hospital

Chicago

Physician Found Guilty—Dr Adolph Buettner is said to have been found guilty of manslaughter August 2, in connection with a criminal operation The jury included a plea for leniency in its verdict

Surgeons in Charge of Ambulances—The chief of police has issued the following order "Hereafter the following will comprise the detail on police ambulances for each shift One policeman one driver and a surgeon, who will be in charge "

Henrotin Memorial Hospital—The Fernand Henrotin Memorial Hospital is so near completion that the faculty and directors have made a formal inspection of it and are laying plans for the opening The formal opening will occur late this month or early in September

New Hospital—Dr Alexander A Whamond and other West Side physicians have purchased the property formerly occupied by the Finsen Light Institute and have equipped the building as a general hospital It was formally opened by a reception July 15, and was named the Robert Burns Hospital

July Mortality—During July 2,217 deaths were reported, equivalent to an annual death rate of 12 39 per 1,000 The deaths numbered 138 fewer than for the previous month and 96 fewer than for the corresponding month of 1906 Chief among the causes of death were Acute intestinal diseases, with 269, consumption, with 256, pneumonia, and violence, including suicide each with 196, heart diseases, with 157, nephritis, with 139, and cancer, with 105

Sanitary Bulletin.—On August 3 the first issue of the *Bulletin of the Chicago School of Sanitary Instruction* devoted to the dissemination of advice and information of the department of health was issued The publication is to be weekly and will include the weekly bulletin heretofore issued by the department of health In addition, the first issue discusses the milk supply of Chicago and quotes at length from a recent paper on the freedom of Chicago born individuals from cancer

Deaths of the Week.—During the week ended August 3, 503 deaths were reported, 45 fewer than for the preceding week and 2 more than for the corresponding week of 1906, equivalent to an annual death rate per 1,000 of 12 44 Acute intestinal diseases caused 120 deaths, consumption, 47, violence (including suicide), 42, heart diseases, 37, nephritis, 34, and pneumonia and nervous diseases, each 31 During the week 7 deaths each were reported from scarlet fever and whooping cough, 5 from typhoid fever, 4 from measles, 2 from tetanus and one from sunstroke

Tenement Tent Centers.—The Chicago Relief and Aid Society has begun the work of establishing tent centers in the congested districts of the city where children may play without danger of being overcome by the heat One of these tent villages is in the yard of the Henry Booth house, one at the University of Chicago Settlement, and the third at the Northwestern University Settlement Each day volunteer physicians talk to the mothers on the proper care of children during the hot weather The following physicians are in charge of the tents Drs Frances M Allen Julia D Merrill William J Butler, John C West, James W Van Derslice, May Michael, Frank W Allin, Thomas G Allen and Grace F Hagans

Increase in Deaths—During the first seven months of 1907 1,838 more deaths were reported than for the corresponding period of 1906 This represents an increase of 13 6 per cent in the annual mortality ratio The causes of death showing important increase are Whooping cough, 170 per cent , measles, 124 per cent , scarlet fever, 60 2 per cent , pneumonia 32 1 per cent , heart diseases 24.3 per cent , bronchitis 22 7 per cent , diphtheria, 16 per cent , tuberculosis, 14 4 per cent nervous diseases, 14 4 per cent , suicide, 14 2 per cent , and nephritis, 9 8 per cent Of the deaths reported during this

Dr. Robert Mc

period 11,090 were of male and 9,698 of female, an excess of 29 2 per cent of male and 28 4 per cent female, over the average excess of the previous two decades

MARYLAND

Herter Lecturer Chosen.—Edward A Schaefer, LL.D, Sc.D, F R S, professor of physiology in the University of Edinburgh, Scotland, has been selected as the Herter lecturer for 1908

Bequests—By the will of the late Reverdy Johnson, the Union Protestant Infirmary, Baltimore, received $5,000 and Johns Hopkins Hospital $10,000, with an additional reversion of $15,000

Hospital Notes—An extensive addition to the Shepherd and Enoch Pratt Hospital, Baltimore, is being constructed which will contain dining rooms, kitchens, storerooms, nurses' quarters and apartments for servants This addition will be connected with the present hospital by a glass covered corridor, which will also be used as sun parlors——The new nurses' home at the Johns Hopkins Hospital has been completed at a cost of about $10,000

Personal—Dr H K. Beall, Baltimore, underwent an operation at Johns Hopkins Hospital, July 29——Dr F S Goodman, U S P H and M-H Service, Baltimore, has recovered from his recent illness and will go to Blue Ridge Mountains to recuperate——Drs William S Baer, Charles C McDowell, Elizabeth Hurdon and E E Langley, Baltimore, are spending the summer in Europe——Dr Richard L McNeer has resigned from the faculty of the Maryland Medical College to become professor of surgical anatomy and associate professor of surgery in the College of Physicians and Surgeons, Baltimore

MASSACHUSETTS

Appeal for Consumptives—The Boston Association for the Relief and Control of Tuberculosis has made an appeal for $5,000 to support the day camp at Mattapan until November 1

Smallpox in Lawrence—During the last four months 113 cases of smallpox have occurred in Lawrence The last patient has just been discharged from the Isolation Hospital The epidemic was attended by no fatalities

Students Go to Labrador—Four students of Harvard, three of whom are from the medical school, have sailed from West Lynn to Labrador, to assist Dr Wilfred T Grenfell during the summer in his hospital and industrial work on that coast

Personal.—Dr Adam S McKnight, Fall River, has been appointed secretary to the board of district inspectors recently appointed to enforce the new ventilation law in factories, and health measures generally——Dr J Teuchter, Boston, has gone to Vienna——Dr Malcolm Storer, Boston, has been elected president of the New England Convalescent Rest Home Association

Boards of Health Meet—At the quarterly meeting of the Massachusetts Association of Boards of Health, held at Gallup's Island, Boston Harbor, July 25, Henry P Walcott president of the board spoke on "Recent Public Health Legislation,' outlining the new law dividing the state into districts, and Dr Frank G Wheatley, North Abington, senator from Plymouth County, spoke on health legislation, giving a résumé of the numerous bills relating to public health, and stating that those killed were as valuable as those enacted

MICHIGAN

Unlicensed Practitioner Fined.—J F Bosworth, an itinerant practitioner arrested at Battle Creek, at the instance of the Calhoun County Medical Society, is said to have pleaded guilty July 30 and to have been fined $100

Enjoined from Practicing—Dr David G Austin, Laingsburg, who, it is claimed, sold his practice to Dr George Robb Flushing, and agreed not to practice in Laingsburg, has been enjoined from practicing in that place on complaint of Dr Robb

Personal—Dr Frank W Shumway, Lansing, secretary of the State Board of Health, has been instructed to make an official investigation of the camp of the Michigan National Guard at Ludington——Dr Harley O Haynes, for five years physician at the State Reformatory, Ionia, has resigned to become assistant physician at the Michigan Home for the Feeble Minded and Epileptic, Lapeer Dr W T Woodbury Detroit, has been appointed to fill the vacancy at Ionia——Dr Charles W Niles, Calumet has resigned as a member of the staff of the Calumet and Hecla Hospital——Dr Walter H Sawyer, Hillsdale, has been appointed a member of the board of regents of the University of Michigan——Dr Moses A Fechheimer, Detroit, who has been studying abroad since last October, sailed for this country July 26——Dr Charles B MacCartney and E R Johnston of the staff of the Oak Grove Hospital, Flint, resigned August 1, to pursue medical studies abroad——Dr Frank N Martin, St Joseph, has gone abroad to study in Edinburgh and Vienna

MISSOURI.

Typhoid Fever—It is reported that Springfield has 50 cases of typhoid fever, due to impure milk and water supplies

Smallpox—The secretary of the Jackson County board of health reports 17 cases of smallpox in one neighborhood at Sni Mills, in the eastern part of the county——Dr J L Downing, Eagleville, is reported to be ill with smallpox

Physician Paroled—Dr John S Davies, St Louis, said to have been sentenced to serve a five-year term in the state penitentiary on the charge of performing an illegal operation, has been pardoned, it is said, by Judge Sadler, on the ground that the enforcement of this sentence would work hardship to the doctor's family

Personal.—Dr John C Lebrecht, St Louis, is reported to be seriously ill as the result of internal and spinal injuries sustained from a fall June 23——Dr J Frank Harrison of State Hospital for the Insane No 1, Fulton, has been selected as superintendent of the Farmington Hospital——Dr Paul F Vasterling, St Louis, has been appointed assistant chief surgeon of the Missouri Pacific System

Licenses Revoked—At a meeting of the State Board of Health, July 13, in Kansas City, evidence was heard against Drs O A Johnson and William O Bye, charged with "unprofessional and dishonorable conduct by advertising in a way that is unprofessional, dishonorable, misleading and calculated to deceive the public." The charges were sustained and the licenses revoked Both of the defendants have since appealed from the decision of the board of the Jackson County Circuit Court (See Miscellany Department, this issue)

NEW JERSEY

Cocain Sellers Arrested.—The sheriff of Essex County and the police of Newark made more than 100 arrests of alleged cocain vendors during July

Tuberculosis Home Planned—The board of health of New Brunswick is making plans for the erection of a tuberculosis hospital at the Poor Farm, where patients afflicted with the disease may be cared for

Typhoid in State Hospital—There have been 82 cases of typhoid fever, with 12 deaths, at the State Hospital for the Insane, Trenton, and the Trenton board of health has informed the managers of the institution that unless the insanitary conditions which prevail there were remedied, legal proceedings would be begun It is reported that at present the sanitary condition of the institution is excellent

Personal.—Drs Frank P McKinstry, Charles M Williams and Frederick J LaRiew have been appointed members of the Washington board of health At a meeting of the board for organization Dr Williams was re elected president——Drs Alfred A Loeb and George W Corrigan, Newark, have established a private ambulance service——Dr Peter P Rafferty Red Bank, has been appointed superintendent of the State Hospital for the Insane, Trenton, vice Dr John W Ward

NEW MEXICO

Typhoid Fever—It is reported that there are 150 cases of typhoid in Albuquerque and that the disease is spreading rapidly

New Prison Physician—Dr David Knapp, who was physician at the territorial prison during the administration of Governor Otero has received a second appointment to that position, succeeding Dr James A Massie

New Practitioners.—At the July meeting of the State Board of Health 32 physicians were admitted to practice in the territory on the presentation of diplomas and other credentials, or on passing the required examination Three of the applicants gave Santa Fé as their address

Hospital Notes—A contract has been awarded for the addition to the Miners' Hospital, Raton, at an expense of about $5 000 The addition will include an operating ward and the completion of the third story of the building——The managers of the New Mexico Cottage Sanatorium, Silver City, have received from Mr Frank Thompson the gift of a new building for the use of febrile patients

NEW YORK

Meeting of Medical Examiners.—The State Board of Medical Examiners met in Albany Thursday to adopt rules and regu lations The secretary of the board Dr Maurice J Lewi, was empowered to take proper steps against W W Turver, Buffalo, for revocation of his license Turver is serving a sentence in Auburn prison for performing an abortion

Adulterated Milk.—Charles A Wieting, commissioner of the State Department of Agriculture, in a recent report states that in spite of many arrests made by the government inspectors, violations of that section of the agricultural law are increasing The method of adulteration in vogue consists in putting about 36 quarts of milk or a little less, into 40 quart cans Then other milk from which the cream has been extracted, is taken to fill up these cans and this is sent to New York for sale as whole or pure milk. It is very difficult to detect this form of adulteration In this state there are 591 milk gathering stations that purchase milk from the producers, to reship to the city for consumption

Personal—Morris M Wall has succeeded Dr Charles F Howard as one of the managers of the Buffalo Reformatory ——Dr Thomas Lewis, a recent graduate of the College of Medicine of Syracuse University has returned to his home in Liberia, West Africa——Drs John F McEncroe and John A Heatly have resigned from the medical staff of Ellis Hospital, Schenectady Drs Frederick C Reed and Walter L Huggins have been appointed members of the surgical staff, and Dr John L Schoolcraft has been made consulting physician and surgeon to the institution——Dr W W Waite has been appointed city bacteriologist of Syracuse, vice Dr William H May, deceased——Dr William C Gilley, New York, sailed for Glasgow, August 3——Dr E Franklin Smith, New York has been appointed surgeon to the Union Construction and Waterproofing Company

New York City

Hospital Robbed.—About $1,000 worth of jewelry and $190 in coin were stolen from the safe in Flower Hospital by one of the clerks

Smallpox on Ocean Liner—On account of one case of smallpox on the North German Lloyd liner *Koenigen Luise,* the surgeon vaccinated all on board, 1,371 in number, and as a result no one was detained at quarantine

After Cocain Vendors—The health department is determined to continue its crusade against the sale of cocain and all preparations containing cocain, without a physician's prescription Since the passage of the ordinance more than 20 druggists have been arrested on the charge of selling cocain illegally

No Special Diet for Consumptives—Because of lack of funds the health department can no longer supply free milk and eggs as a special diet for the tuberculous During 1906 more than 22 000 quarts of milk and 44,500 eggs were furnished in Manhattan alone Altogether 50,000 quarts of milk and nearly 100,000 eggs have been given away

No More Hospital Grafting—Dr S T Armstrong, general medical superintendent to Bellevue and Allied Hospitals, learning that visiting physicians were sending to the hospitals patients who were able to pay, has issued on order that any patient who has more than $50 value in his possession when taken to hospitals may be charged $1 50 a day for treatment

Fighting Mosquitoes.—Fort Totten, Bayside and Hollis L. I, have been fighting mosquitoes in their own crude way all summer and now ask the city to aid them——Mosquitoes in Queens are to be attacked next summer, possibly this summer ——The steamboat *Governor Flower* of the quarantine fleet has been cruising through Hell Gate looking for mosquito incubators

Eddyite Found Guilty—The Court of Special Sessions found Clarence W Byrne an Eddyite, guilty of violating the penal code by having wilfully neglected to provide medical attendance for his 6 year old daughter, who died of pneumonia, with no other attendance than that provided by an Eddyist practitioner The penalty for this offense is imprisonment for one year, a fine of $500, or both

Floating Camps for Consumptives—The Charity Organization Society is making use of old ferryboats as floating camps for those ill with tuberculosis The *Southfield* has been placed in commission at the foot of West Sixteenth Street, North River, and has accommodation for 60 or more patients, a trained nurse is in charge, and a regular staff of visiting physicians The society has issued an appeal for $3,000 to continue the advantages of the fresh air, food and nursing provided

Contagious Diseases—There were reported to the sanitary bureau for the week ending July 27, 401 cases of measles, with 24 deaths 346 cases of tuberculosis, with 143 deaths, 278 cases of diphtheria, with 30 deaths, 180 cases of scarlet fever, with 14 deaths, 81 cases of typhoid, with 14 deaths, 47 cases of whooping cough, with 10 deaths, 20 cases of cerebrospinal meningitis, with 8 deaths, one case of smallpox, with one death, and 20 cases of varicella, a total of 1,374 cases and 244 deaths

For Garbage Incineration—Dr Alvah H Doty, health officer of the port, states that the present method of garbage disposal requiring the separation of garbage from other refuse, is impracticable and can not be enforced Practical sanitarians are unanimous in the opinion that a city's garbage and other waste should be collected and cremated That this can be done has been practically demonstrated both in Europe and this country It is declared that New York has exceedingly insanitary and impracticable methods of disposal of garbage and other refuse, and that there is no reasonable excuse for its existence Josiah C Pumpelly, president of the City Improvement Society, asks why the mayor does not fulfill his promise, made in 1906 and appoint a commission of experts to examine into this matter, and report at an early date, that our city officials may be prepared to act wisely in the premises

OREGON

Personal.—Dr William K. Haviland has been elected mayor of Estacada——Dr Andrew C Panton, Portland, chief surgeon for the Portland Light and Power Company, and a member of the State Board of Medical Examiners, was found guilty of a technical assault on an employé of an itinerant practitioner, against whom a charge of unprofessional conduct had been made, and fined $15

State Society Election—At the thirty-third annual meeting of the Oregon State Medical Association, held at Seaside, the following officers were elected President, Dr Robert C Coffey, Portland, vice president, Dr John H Rosenberg, Princeville, secretary, Dr William House, Mount Tabor delegate to the American Medical Association, Dr Andrew C Smith, Portland, and alternate, Dr Walter T Williamson, Portland

Hospital Notes.—An emergency hospital is to be equipped at the Union depot, Portland, by the Northern Pacific Terminal Company——Sister Mary Theresa of the Benedictine order has purchased the home of Dr D A McIntyre, at Oak Grove, between Portland and Oregon City, and will found a sanatorium and hospital for children at a cost of about $50,000——Drs Walter Culin and Richmond, Coquille, have purchased the Academy Building in that city, and will remodel and fit it up as a hospital——The Chemawa Indian School is building a new hospital building at a cost of nearly $20,000 which, it is expected, will be ready by the opening of the fall term of the school

PENNSYLVANIA

Whooping-Cough Epidemic—The health department of Pittsburg has ordered placarding of whooping cough, as there are 400 cases of the disease in the city, and about 25 new cases are being reported daily The health bureau intends to enforce strict quarantine on all infected houses

Personal.—Dr Lawton M Hartman, Jr, York, has returned from Europe.——Dr James Evelyn Pilcher, Carlisle, has been elected censor for the second district, and Dr Americus R Allen, Carlisle delegate to the state society——Dr Frederick C Johnson, Wilkes Barre, who has been seriously ill with appendicitis at the Harrisburg Hospital, is reported convalescent.

Hospital Opened.—The new Sewickley Hospital, erected at a cost of $60,000, was dedicated with impressive ceremonies July 20 The following compose the hospital staff Drs R McCready, James M. McCready, Frank L. McCready, Robert J Murray, Robert S Macrum, Dewitt B Nettleton, John Walters, Fletcher K. White, Thomas H. Grimes, Samuel Jennings, R. N Dickson, J R McQuaid, R R. Hill, R. W Lyons and Joseph R. Hood.

Report on State Antitoxin.—The State Department of Health reports that during the first six months of 1907 the death rate from diphtheria among persons treated with state antitoxin was only 8 per cent, as compared with 11 per cent for the first six months of 1906 Of the 1,712 cases treated, 1,560 of the patients were restored to health and strength During the same period 1,073 individuals were treated with immunizing doses, and of this number only 18 contracted the disease

Philadelphia.

Hospital Report.—The report of the Presbyterian Hospital for July shows that 186 patients were admitted to the institution during the month There were 1,943 new patients treated in the various *dispensaries and* 93 ambulance calls were made

Personal—Dr J Thompson Schell has *resigned as clinical* professor of pediatrics at Temple College and as pediatrician to the Samaritan and Garretson hospitals——Dr Paul J Sartain sailed for Europe August 1——Dr Joseph Garzourka of Buda*pest, Hungary, is spending a* few days *in the* city, on his tour of the world

Health Report—The *total number* of deaths reported for the week ended August 3 was 606 *This is a decrease of 32 from* the number reported in the preceding week and an increase of 95 over the number reported in the corresponding week of last year The principal causes of death were Typhoid *fever*, 9, *pertussis*, 9, *diphtheria* 6, consumption 59, cancer, 20, *meningitis*, 3, *apoplexy*, 21, tetanus, 2, *heart disease*, 42, acute respiratory disease, 22, enteritis 153, appendicitis 6, Bright's disease, 39, premature birth, 10, congenital debility, 28, suicide, 3, accidents, 17, and marasmus 15 There were 118 cases of contagious diseases reported with 13 deaths, as compared with 138 cases and 14 deaths in the previous week

WASHINGTON

Protest Against River Pollution—At a meeting of the State Board of Health at North Yakima the mayor of Prosser entered a protest against Naches City polluting the stream with sewage The question was left to the state sanitary engineer, who was ordered to make a thorough investigation and report *at the next meeting* of the board in Seattle, August 3

Personal—Drs Adelbert J McIntyre and J F MacDonald have associated themselves with the Hoquiam General Hospital——*Dr J R Pichard Chewelah has been appointed su*perintendent of the State Institution for the Feeble Minded, Medical Lake——Dr Martin L Adams Ballard, has filed application for his appointment as assistant health officer of greater Seattle

Milk Commission Appointed—The Seattle board of health has appointed a certified milk commission, consisting of Drs Robert M Stith Philip V Von Puhl, George B McCullough, William G Booth and Frank P Gardner *The law provides for the appointment of a certified milk commission* by the board of health The members of the commission are to serve without remuneration, but are to receive their necessary traveling expenses An inspection of the dairy and test of the products will be made by the commission on the application *of a dairy to sell certified milk*

Defines Duties of Officers—*In an opinion rendered July* 24 *the attorney general gives the following* decision *regarding* the duties of city and county health officers

> It would appear that the city health officer has charge of the contagious and infectious diseases within the incorporated limits *of cities referred to in the act* which includes cities of the third class subject to a general supervision of the county health officer and that the county *health* officer has charge of the *contagious* and infectious diseases outside of incorporated cities with general supervisory control over the whole county The county bears the *expense incurred outside of the city and the city those incurred in* its behalf

WISCONSIN

Smallpox—The health officer of Monroe announces that the smallpox outbreak at Winslow is now under control and the eight individuals ill with the disease are under quarantine

Personal—Dr Sherman E Wright, Marinette, and family, left for Europe August 1——Dr Edward L Shepherd, Edgerton, *submitted to a second operation* June 30——Dr and Mrs Albert G Jenner, Milwaukee left for Europe July 29——Dr George W Crosby, Sheboygan suffered a slight cerebral hemorrhage July 29

Increase of Insane—The report of the State Board of Health shows that the number of insane in state and county institutions has increased *from* 5 836 *to* 5 968 *during the past* year About 60 per cent of the insane are men and 40 per cent women The ratio of insanity is 1 to about 382 of the population of the state

Medical Society Meetings—The physicians of New London met July 29 to form a local organization Dr George T Dawley was elected president Dr Henry L Bacon secretary, and Dr August L C Borchardt, treasurer——At the annual meeting of the Lincoln County Medical Association, held in Merrill, the following officers were elected President, Dr Michael Ravn, Merrill, vice president, Dr William E Wray, Tomahawk, secretary, Dr A R Wittman, Merrill, treasurer, Dr Frank R. Winnemann Merrill and censors, Drs E K. Morris, Wilbert H Monroe Merrill, and John D Cutler, Tomahawk

GENERAL

Hospital for Children in Honolulu—Mr A S Wilcox, Kauai, has given $50,000 for the establishment of a hospital for *children at Honolulu*

Few Deaths from Smallpox—The statistics for smallpox in the United States *for the seven months ending in July* show a total of 1,870 cases, with only four deaths

Nurses for the Navy—Surgeon General Rixey will ask congress at the next session to appropriate $45,000 wherewith to organize a corps of trained nurses for the navy

American Public Health Association—The thirty fifth annual meeting of this association will be held at Atlantic City, Sept 30 to Oct 4, 1907 *A section of vital statistics and a* section of municipal health officers will be organized Hence the meeting will be of especial interest to boards of health federal state and municipal, on both executive and technical sides, *and to all others engaged in* sanitary work Boards of health and other sanitary *organizations are invited to* send delegates to the meeting to discuss one or more of the various topics considered The following subjects have been selected *for discussion* Milk, laboratory findings in diphtheria, *immigration in its relation to public health*, nuisances which should be abated by boards of health, *control of the* so called minor infectious diseases, vital statistics and the value thereof, construction and care of streets from a health standpoint, amendments to constitution and by laws

Health Report of the Philippines—Dr Heiser in his report for the first three months of 1907, states that the incidence of dangerous communicable diseases has been remarkably low for the quarter and that there is a favorable outlook for the entire *year* The *last case of plague occurred April 20 1906* A few cases of cholera were reported from northern Samar, *from Capiz, and from Occidental Negros Repeated efforts* were made to obtain specimens for laboratory diagnosis but generally the patient had either died or recovered before a person competent to make a microscopic examination could reach the *locality, this was due to the fact that usually only one case occurred in a locality and generally in some remote* district There has not been a single death from smallpox in the city of Manila during the entire year Systematic vaccination has been practiced In the provinces in which heretofore about 6,000 deaths have occurred annually from smallpox *there has not been one death from this* disease reported during the past year There has been the most marked reduction in the mortality of the city of Manila The solution of the leprosy problem has passed from the theoretical to the practical stage Two years ago it was estimated that there were about 4,000 lepers in the islands To day the number has been reduced to 2,895, which shows that the policy of segregation is accomplishing the eradication of the disease much more rapidly even than was anticipated The number of cases of dysentery among Americans is being steadily reduced as the rules of prophylaxis are better understood There have been no epidemics of dysentery, typhoid or other dangerous communicable disease Typhoid the report states, seems to be gaining a firmer foothold in the Philippines than has hitherto been the case *As the changes which ordinarily accompany introduction of modern improvements* are more and more introduced in the islands, it is becoming more apparent that this disease is *affecting* more persons At present the construction of the new railroads is responsible for the gradual introduction of typhoid in many places at which it has not been encountered heretofore Fortunately, so far, the disease has apparently been due to direct importation cases having occurred among Americans and Japanese who have only recently come to the country and either arrive in the incubation period, or have ingested infected foods obtained *in the countries from* which these new arrivals come Filipinos seem to be the victims only in so far as they come in contact directly or indirectly with the former *nationalities* It seems probable that the reasons why typhoid has not spread more heretofore in the *Philippines are not so much because of the tropical climate*, but because the ordinary vehicles by which the disease spreads have not been present For instance, it is only a few years since milk of local production has been used to any extent in the islands, there were practically no general water distributing *systems or reservoirs in the absence of sewer systems* it was practically impossible to infect places in which oysters and other shellfish grow and the comparative absence of flies during the greater portion of the year, are all explanations as to why there has not been a more *general spread of the disease* heretofore The report *goes on to state that restaurant and* hotel keepers are required *for drinking and kitchen purposes*, to use water which has been *boiled* or *otherwise sterilized* in a manner approved by the Board of Health The work of in troducing artesian wells is being pushed forward rapidly, and many towns in the provinces are using artesian water exclusively

FOREIGN

New Medical Society in Australia—A new society, called the Anatomical and Anthropological Society, was inaugurated in connection with the Medical Students' Society of Melbourne University, June 5

Personal.—Prof W His, the son of the noted anatomist, has been chosen as the successor of Leyden He is a former pupil of Curschmann, who has distinguished himself as a teacher by his clinical work at Basel and Göttingen, and is already the author of a number of important works

Additions to London Hospitals—On July 23 the new department for out patients at St Bartholomew's Hospital London, was formally opened by the prince of Wales ——On July 24 Queen Alexandra opened the new buildings of the Hostel of St Luke established in 1892, for the medical and surgical treatment of the clergy of the Church of England, their wives and children

Plague in Japan.—Passed Asistant Surgeon Cummings reports that the plague situation in Yokohama is becoming rather serious, not so much on account of the actual number of cases, but because of the number of foci scattered throughout the city and the number of infected rats found The fear of spread to Tokyo is not unfounded, as one man sent from the poorhouse in Yokohama died of plague on the road to Tokyo

Reception to Ramon y Cajal.—On June 30 a reception was given at the Royal Academy of Medicine, Madrid, in honor of Dr Ramon y Cajal The *Siglo Medico* states that, while the reception was given as a mark of esteem it is a tardy recognition of his eminent ability as a neurologist, and that his work would have been made easier had recognition been given him earlier in life when he was struggling to obtain a foothold in the medical and scientific world

Typhoid Fever in Scotland.—An epidemic of typhoid fever is reported at Peterhead, a town of about 15,000, in Aberdeenshire The majority of the cases are of a mild type, and the death rate is a little over 5 per cent The source of the outbreak has been traced to one of the reservoirs which supply the town with water Like so many other towns on the north and northeast coasts of Scotland, Peterhead is inadequately supplied with water, and the inadequacy is exaggerated during the herring season when the population is increased by from 3,000 to 5,000 inhabitants

Medical Supervision of School Children in Africa—The *South African Medical Record* states that medical supervision of school children is being brought before the public in the Transvaal There exists in Johannesburg a committee composed of teachers, physicians and laymen, which has for its object the establishment of a system of medical inspection of schools Some time ago this committee formulated a practical working scheme for the routine inspection of all children attending the government schools in the colony The plan provides for the creation of a central school medical department under the direction either of the department of education or that of public health and the appointment of a staff of inspectors The duties of these inspectors will include The examination of all new pupils on admission, and re examination of all children at stated intervals routine biweekly visits to each school, reporting on sanitary conditions of schools, and instruction of teachers in principles of physiology, hygiene and temperance

LONDON LETTER.

(From our Regular Correspondent)

London, July 27, 1907

Women as Physicians, Professor Osler's Views

In distributing the prizes at the London School of Medicine for Women, Professor Osler said that the profession of medicine, in spite of its difficulties and trials is a satisfactory one for women if they realize that it is not all roses and cream, and that they will not get a pecuniary return for everything they do Four principal avenues are open to women The first is in the scientific branches in bacteriology, histology, and many departments of pathology, where much of the best work is being done by women and which offers good careers The second is in institutions, and he said that he would like to see one or two women physicians connected with every insane asylum The most important avenue is general practice but only those are fitted for it who among all the worries anxieties troubles and annoyances, can come up smiling every time Women of course are specially fitted for dealing with diseases of women and children but the chief trouble is that women—as a rule, men's women—do not believe much in women When a paternal government institutes a proper system of school inspection an excellent field will be open to women Lastly, there is the work in India and in the mission field During the past year 18 of the students of the London School of Medicine for Women have passed the M.B of the University of London—the highest degree obtainable in the United Kingdom, four have taken the M D, and one the M S (the most severe examination possible in surgery) Others have succeeded at the universities of Durham and Ireland

Educational Health and Food Campaign

The Bread and Food Reform League has held a meeting at the Mansion House in order to spread information about health and, without advocating any special system of diet to direct attention to healthy economical foods which are much neglected The fact was pointed out that much of the underfeeding of the poor is due to ignorance as to the value of finely divided ground whole meal, oatmeal, etc, rather than to lack of means This ignorance is held to be a cause of infantile mortality and physical degeneration It was shown that a pound of protein could be obtained from peas for 14 cents and from oatmeal for 15 cents, while if derived from beef it cost 64 cents The importance of eating whole meal bread instead of white bread was inculcated in consequence of the poverty of the latter in proteid and mineral constituents A difficulty in the use of whole meal bread is the coarseness of the meal, which renders the bread indigestible by some persons The league advocated, therefore that whole meal should be ground very fine thus containing all the nourishment of wheat in an easily digestible form while for weak digestions the outermost skin of the bran should be removed

VIENNA LETTER

(From our Regular Correspondent)

Vienna, July 12 1907

Congress of Contract Physicians

The Austrian "Verband der Aerzte der Krankenkassen" which recently met is an association comprising nearly all the practitioners appointed by the officially recognized "Kassen" The subjects discussed at the meeting were of interest to the profession generally The law in Austria requires all wage earners to become members of the "Krankenkassen" (sick club) of their district This club not only provides for medical services, but also ensures the payment of a daily sum to the individual incapacitated for work by sickness, for a period not exceeding 200 days The funds for the club are derived from deductions made from the salaries of the employés to which sum the employer has to add a percentage The burden on the employer is not a small one and as the members of *these clubs* in Vienna alone number over 500,000, the sum contributed runs up into the millions Still the remuneration of the physicians doing the work for these clubs is far from satisfactory The sum of $400 a year is seldom paid, while the number of members in the district which pays this amount is seldom less than 1 000, and more often 1,500 The speakers at the congress were unanimously of the opinion that the conditions required changing as both the club members and the physicians were dissatisfied Overburdening the physician went hand in hand with less thorough treatment At the present rate of payment a visit to a patient's house was less than 10 cents and an office visit brought 6 cents The extension of the compulsory membership of clubs as contemplated by the government would be still more injurious to the medical profession as the new law requires all people who are not in business for themselves and whose incomes are less than $1,000 a year, to become members of "sick clubs"

Health of Laborers in Austria

The recent report of the Austrian department of commerce contains some interesting items regarding the health of the laboring classes The best average health among the working classes was found in the city dweller and not in those living in the country The iron workers were especially healthy, while masons yarn spinners and wood workers showed the poorest health The most prevalent disease was pulmonary tuberculosis heart disease and granular kidney came next, while arthritis and bronchitis were very frequent Accidents were comparatively few during 1906 only 16 per 1 000, of which only 7 per cent were fatal The electrical industries were the most dangerous to life, as 60 per cent of all injuries were fatal The chemical industries and iron and stone industries were about equally dangerous to health, but not to life The fewest accidents naturally, occurred among the female workers, the majority of such accidents in 1906 were in the celluloid trade, several explosions having occurred in celluloid factories

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters, that a teaspoon holds five cubic centimeters, i e, more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses]

Sending Tuberculosis Patients Away

As The Journal has many times urged, and as the *Journal of the Outdoor Life*, July, 1907, well remarks, a word of warning to physicians is needed lest they send to distant climates helpless and penniless patients with tuberculosis, who, even at best, will not be able to earn their own support for months to come, and who, even if they are able to work, can find no employment at the places to which they are sent Such errors in judgment are especially noticeable in New Mexico and Arizona, to which states pulmonary tuberculosis patients are now so frequently sent

Local sanatoria should be developed in almost every region of this country Statistical results are positively proving that tuberculosis can often be cured and frequently arrested in the region in which the case develops Patients who can not be thus benefited will often not find improvement anywhere Certain selected patients must still go to special climates to be permanently cured, but these are perhaps only 15 per cent. of the total, hence it is not justifiable to send a patient to a distant climate either to die or to be subjected to hardship, or to become a burden on another community It is really an unjust dodging of a locality's own responsibilities

Intermittent Fever

If for any reason quinin can not be given in malarial fever, a number of other drugs may be used The best substitute is arsenic The dose must be large, and Fowler's solution should be the preparation used, and it should be pushed to the point of tolerance Arsenic, however, for any length of time in large doses can do serious harm to the system

℞	c c	
Liquoris potassii arsenitis	25	fl℥i

Sig Take five drops in water, three times a day, after meals, and rapidly increase to the point of tolerance [If given by drops, begin with 5 and add one to each dose, viz, next dose 6 drops, next 7, next 8, and so on]

The symptoms that show full physiologic action has been reached are pain in the epigastric region, nausea, perhaps vomiting, diarrhea, sore throat, red eyelids, puffing under the eyelids, especially in the morning, and perhaps a diminished amount of urine If these symptoms occur the arsenic should be stopped and some iron preparation given, as

℞	c c	
Tincturæ ferri chloridi	10	flʒii
Syrupi acidi citrici	50	fl℥iss
Aquæ ad	100	fl℥iii

M Sig A teaspoonful in water, three times a day, after meals

The symptoms having subsided, as they will in two or three days, begin the Fowler's solution again at a little smaller dose than that which was last given when the symptoms appeared, and keep each dose the same, i e, not increase If symptoms of overaction again occur, stop again as before, but do not persist in giving arsenic very long after the chills have ceased

A substitute for quinin now often advocated in malarial fever is methylene blue It is said primarily to act on the protoplasm, while quinin acts on the chromatin of the plasmodium so that the young forms of malarial parasites are scarcely affected by methylene blue, while they are markedly acted on by quinin In the late forms the reverse is true Hence methylene blue is most valuable in chronic cases of malaria, in the same cases in which arsenic is of value It should also be used when there is marked idiosyncrasy against quinin, and possibly when there is a tendency to hemoglobinuria Certain it is that methylene blue is by no means as sure to eradicate the malarial plasmodia as is quinin If one has the belief that quinin will cause a pregnant uterus to contract (but it is many times more likely that a severe malarial chill will produce abortion than that a large dose of quinin will) methylene blue can be substituted Methylene blue is not methyl blue, which is practically what is sold under the trade name of "pyoktanin" Methylene blue sometimes causes dizziness, nausea and vomiting, and there may be vesical irritability, and even suppression of urine from its use The urine is always colored green and sometimes bluish The dose is 10 to 20 centigrams (1½ to 3 grains) every four hours, or 0 30 (5 grains) three times a day, after meals, in capsule or solution, with plenty of water It is but slightly soluble in alcohol and will dissolve readily only to about 3 per cent in water Powdered nutmeg is often given with methylene blue (10 to each 30) and is said to prevent the tendency to strangury

℞	gm	
Methylthioninæ hydrochloridi	4	ʒi

Fac capsulas 20 Sig A capsule with a glass of hot water, every four hours (four times a day)

Gastrointestinal Disturbances in Children

To prevent gastrointestinal upsets in children over 3 years of age parents should be taught the following

1 Avoid overfeeding

2 Allow no food between meals

3 Insist on the food being eaten slowly and well chewed

4 Meat, or at least some good proteid, should be given once a day

5 Do not force feeding, even milk, if the appetite is absent

6 If the child eats enough of other food, do not allow the use of milk as a drink instead of water with the meals This does not conflict with the use of bread and milk as a meal, without other food

7 Do not give a child too many kinds of food at any one meal

8 Allow no tea, coffee, soda-fountain liquids, iced water, or any except the simplest of home, summer drinks

9 If candy is allowed, none but the simplest, and that pure, and in very small quantity, directly after a meal

10 Give no paregoric, morphin soothing-syrup, cholera drops, or any "patent medicine" to "check" a diarrhea

11 If the stopping of all food and the administration of castor oil or some simple rhubarb or senna preparation does not stop the gostrointestinal upset, the family physician is needed

Pneumonia in Infants and Young Children.

Dr William P Northrup (*New York Med Jour*, July 6 1907), thus sums up the treatment of this disease in children

I HYGIENIC

'Treat the patient as though he had an infectious fever Avoid treating the patient according to the temperature alone," but take into consideration all the other symptoms The room should be large, free from dust, sunny, and with plenty of fresh air, without drafts There should be great care in the cleanliness of the little patient The eyes, mouth, teeth, finger-nails genitalia and the whole body and the bed linen should be kept scrupulously clean

II PURGATION

Free evacuation of the bowels with castor oil is the first indication, or calomel followed by castor oil Later "hot high saline injections serve well to prevent or remove flatulence"

III. FEEDING

Milk must be reduced in amount or cut out entirely, if there is tendency to flatulence Clean, pure milk in clean receptacles, taken into a clean mouth and swallowed into a clean stomach, is emphasized In high fever and in serious illness milk is not well digested, and even diluted or peptonized milk must perhaps be omitted If milk can not be given, "plain water, barley water, or some thin preparation of food or egg albumin is indicated" The substitute selected depends on the age of the patient and the ability to digest "In the treatment of pneumonia, put the whole attention on everything but the lungs Purgation and courageous starvation is the first treatment in time and in importance"

IV ANTIPYRETICS

Not the height of the temperature alone, but an added toxemia, as shown by a dull apathetic condition or stupor restlessness or delirium, call for antipyretics Coal tar products should not be used "Sponging, cold applications laid on, free drinking of water, cold bowel injections, cold air in the room, all these may be used Tub baths may be used freely if they are found to quiet the patient better and to disturb him less than sponging" The feet of the child should not be allowed to be cold, they should be kept warm If the feet and body are warm, exposure to fresh, cold air can do the patient nothing but good. Hence he advocates the "outdoor open air day and night"

V HEART STIMULANTS

The hearts of young children rarely require stimulation Flatulency should be prevented as tending to disturb the heart and breathing, and with the feet warm and the air fresh, drug stimulation will not often be needed. If they are needed, Northrup prefers wine, whisky and strychnin He prepares the wine or whisky in sufficient quantity for half a day and well diluted, the wine with three volumes of water, the whisky with eight volumes From this diluted wine or whisky the patient is given a small dose, according to the general indications of depression The pulse should not be watched too carefully in children, it is the general condition that is more important.

"If strychnin is needed, the dose should be from 1/120 to 1/60 of a grain every four hours, according to the age and needs"

Rest and quiet, promoting the general comfort, Northrup regards as the most important directions of all concerning the treatment of pneumonia It should be remembered that the physician's function is to aid the little patient in his struggle against toxemia, and that "the prognosis in primary pneumonia is good in 90 per cent of cases Let us aid, not take charge of its struggle, not handicap the patient Give all treatment at prescribed intervals, and let the child rest and sleep uninterruptedly for three hours or more Give food and medicines, and arrange its toilet at the same interruption of rest and sleep Make the child comfortable and let it rest Avoid poultices unless for local pain, using them then only intermittently, letting the skin become dry between applications and discontinuing as soon as possible Do not bind them around the chest, but lay them against the localities only Cold local applications on the lungs are useful, but, in my experience, distress the child. They are better borne by adults."

The treatment of pneumonia as above outlined by Dr Northrup is timely and commendatory Too much is done for a sick child, they are not allowed to rest, poultices have been much over used in young children It is possible from over poulticing so to congest the pleura in pneumonia as to precipitate an empyema

Impetigo Contagiosa

Outside of the eczemas, and only slightly resembled by one of them (eczema vesiculosum, commonly called "milk crust"), from which it is generally easily differentiated by the more or less scattered lesions and absence of itching, there is no more common, unsightly and annoying skin condition to which children are subject than impetigo contagiosa Rebellious to any but the proper treatment, it yields readily when that is pursued, and only a few days are necessary to effect a cure

First of all, the scabs must be removed and the intestinal tract cleaned The latter is best done with a simple dose of calomel at bedtime (2 grains if the child is 5 years old), followed by half a siedlitz powder in the morning Before the child is put to bed the scabs should be thoroughly smeared with either vaselin or olive oil In the morning they will generally be found soft enough to be readily removed with soap and water If the lesions are on the scalp, place over them several layers of gauze wet with the following solution

℞

	gm or c.c	
Zinci sulphatis	|50	gr x
Phenolis liquefacti	1	m xv
Aquæ ad	150	fl℥v

M et sig

Next cover with rubber tissue and bandage This should be done in the morning, and the gauze should be moistened up two or three times during the day and again at bedtime The next morning the scabs may be removed with soap and water They must be removed thoroughly and a perfectly clean surface left, otherwise the treatment will not be entirely successful When this is done apply the following ointment

℞

	gm	
Unguenti hydrargyri ammoniati	30	℥i

Sig Apply to the affected skin three times a day

Two or three days are usually sufficient to effect a cure

After the catharsis a tonic is generally indicated, for which one of the following may be used for a child 5 years old

℞

	gm	
Ferri carbonatis saccharati	2	gr xxx

Fac capsulas 20 Sig One capsule three times a day, after meals Or

℞

	cc.	
Tinct ferri chloridi	2	m xl
Syr acidi citrici	25	fl℥i
Aquæ ad	100	fl℥iv

M Sig 5 c c, a teaspoonful, in plenty of water, three times a day, after meals

Perhaps the best and most easily administered iron for children is the saccharated oxid of iron, given in compressed tablets of three grains each The child chews up one of these sweet tablets three times a day, after meals

Hay Fever

Dr E Fletcher Ingals Chicago, writes The prescription for hay fever in the department of Therapeutics in The Journal, July 6, 1907, p 84, and credited to me, I am unable to remember as having recommended at any time, for it certainly is objectionable in several ways 1, I have not tested resorcinol in this connection, 2, the adrenalin chlorid, one half grain to two ounces, would be very irritating in most cases of hay fever, and 3, the boric acid I do not use in this connection, as I find the biborate of soda much better I have found the following prescription very useful in some cases and think it well to try it in every case

℞

	gm		
Cocaine hydrochloridi	|15	or	gr iss
Sodii boratis	|30		gr v
Suprarenalin (1 1,000)	4		ʒi
Glycerini	2		ʒss
Aquæ camphoræ ad	30		℥i

M Sig Use as a spray to the nose four or five times daily or oftener if needed.

Correspondence

Taxing Hospitals

New York City, July 29, 1907

To the Editor.—May I call attention to a possible blessing which the people of Illinois may receive from the recent decision of the courts in that state, that hospitals receiving pay patients are taxable? Will it not advance the cause of deserving medical charities and do much to make the able to pay patient realize that free medical attendance is as much a charity as a free bed or a free meal? Conditions may be different in Chicago, but in New York City many are unabashed at applying for free treatment at the hospital where many pay patients are treated, and yet would be ashamed to go to Bellevue, which is known to be only a charitable institution Likewise, many who would not send their servants or clerks to Bellevue (or at least, would not wish it known they had done so), will unhesitatingly send them to a semi private hospital—to the free wards

As I advocated in *Charities* about two years ago, in an article which you saw fit to quote in your editorial[1] columns, it seems to me that the first step toward the radical cure of the abuse of medical charities must be their total separation from the cloak of medical services which are not charitable May not the taxing of all but the strictly public institutions be a step in the right direction? John Joseph Nutt, M D

The Guide to Current Medical Literature

Chicago, July 9, 1907

To the Editor —When The Journal issued the first volume of its "Guide to Current Medical Literature, with an Index of Authors and Titles," I could not help complimenting you on the excellent work achieved For several years past I have been watching the progress of this feature of The Journal, and I now again take the opportunity of complimenting you and the staff for having produced such an excellent one this year The last issue of this index far surpasses any other—particularly as to classification, subject matter and cross index It would indeed be very strange if the medical profession did not thoroughly appreciate your efforts, for the index has always been an excellent reference volume for the survey of anything and everything appertaining to medicine It has been my constant companion in doing medical literary work I hope that others use it as much as I do George F Suker

The Bibliography

Chicago, July 25, 1907

To the Editor —The papers read at the annual meeting of the American Medical Association often represent the results of personal experience and in many instances reference is made to the work of others or to the author's earlier reports The earnest student is often anxious to learn more and his efforts are greatly facilitated if there is appended to the paper an exact list of references Such a bibliography is easily prepared if the author will think of it in time A distinguished Buffalo gynecologist told me at the Atlantic City meeting that, in the preparation of his paper, he had spent two weeks in the Surgeon General's library at Washington It is to be hoped that we may receive the benefit of his research in the form of specific reference so that all interested may know exactly where to look for additional information I suggest to all essayists the great value and convenience of an adequate and correct bibliography Denslow Lewis

The Established Specialist vs the "Developing Physician"

Depew, N Y, July 27 1907

To the Editor —Dr Normon in his paper published in The Journal of the A M A Number 23 page 1977 In that part of his paper where he described the City Physician vs the Country Physician, he describes a state of affairs the existence of which has been positively demonstrated to me The difference or unfairness or foul play, however, is not between the Country Physician and the City Physician, but it is between the Established Specialist and the College Professor on the one hand, and the General Practitioner or the Developing Physician on the other hand

Not only are our state meetings largely run and positively controlled by the Established Specialist and the College Professor but likewise our National Body or the Annual Meeting of the American Medical Association is positively controlled by that same class of men

Compared to the number of membership what is the per centage of General Practitioners or Developing Physicians or developing Specialists, as you please, that appear on the programme of our annual meetings of the A M A as compared with the number of Established Specialists or 'College Professors?

Some may claim that the Common Physician or the Developing Specialist does not want to read papers, but this is a mistake They do want to read and many of them have something original and of great interest to bring up for discussion, but the Secretary of the section, (if he takes the trouble to answer at all) informs the Common Doctor" that the programe is full etc, and when the programe finally comes out the "Common Doctor" has the pleasure of seeing the same old Professors and Eminent Specialists there on the programme (with their book agent at his door) that have appeared on the programe year after year to talk on some long established facts that all are familiar with and that no one of average intelligence would consider of sufficient importance to waste the time to hear it re hashed

Now these are the facts of the case as all well know What shall we do about it? One of two things

1st The Common Physician must become a better politician Elect your share of officers, organize, go to your county, your state and your national meetings and vote and know who you vote for

2nd If the Common Developing Physician and the Established Specialist and College Professor cannot agreeably associate and listen to each others papers, then it would be better and only fair play to divide and have a Common Doctors branch and an Established Specialists and College Professors Branch

The attendance at our meetings, both state and national would no doubt be twice what it now is and much more agreeable and instructive could the solution of this problem be brought about so that the meetings would be of mutual interest

Some timid physicians, instead of boldly demanding their rights, silently mope over their trouble and show their grievance at the regular medical gatherings by their absence only

The extent of the existance of this spirit or condition of affairs is evidenced in a manner that none can dispute by the registration lists of the annual meetings which registration lists always show a great preponderence of Established Specialists and College Professors in attendance as compared to the Common Physicians while in membership the ratio is just the reverse, the Common Physicians out numbering their society "rulers or bosses" by a vast majority perhaps ten to one

The medical societies of today are run by a set or fixed political machine of appointments which practically disfranchizes its members

What percentage of members of the county, state and national societies of today are encouraged to take any actual part in the management of its affairs other then to criticize the appointments after they are made?

In an organization, or nation where the *ballot* is actually or designedly the ruling power all men must be considered equal and are from a governing standpoint equal, therefore, would it not be well to smooth down and eliminate the difference before it ruptures our ranks Geo N Jack

Diagnosis in Incipient Insanity—There is no doubt that a training in the accurate observations of symptoms in incipient mental disorders is needed, to give that ounce of prevention which in mental disease is worth its hundreds of pounds of cure—F P Norbury, M.D, in *Charities and the Commons*

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[1] The Journal A M A, May 27, 1905, 1691

Book Notices

THE HOME MEDICAL LIBRARY By Kenelm Winslow, B A.S M D ormerly Assistant Professor Comparative Therapeutics, Harvard niversity With the Cooperation of Many Medical Advising ditors and Special Contributors First Aid Family Medicines tc In Six Volumes Cloth Pp about 270 each Price $7 50 ew York The Review of Reviews Co , 1907

The first volume is devoted to first aid in emergencies, in luding emergency treatment of fractures, dislocations, vounds, poisoning, and accidents of various sorts, as well as a opular consideration of germ diseases, with some instructions egarding prevention of contagion, avoidance of disease, etc The second volume takes up diseases of the eye, ear, throat nd nose and the care of these organs, as well as skin diseases headache, rheumatism and sexual hygiene The latter part of the volume is devoted to an article on insanity by Dr Albert Warren Ferris and an appendix on "patent medicines" The observance, by the public, of the three rules laid down by the writer would practically solve the proprietary medicine question They are Do not use any remedy that does not show the formula on the label, consult a physician before using very much of any preparation, take no medicine internally without a physician's advice In this article the pure food and drug legislation as well as the articles in *Collier s Weekly* are reviewed and summarized Special attention is paid to headache powders and "tonics"

Volume three takes up nervous diseases, the mother and child, diseases of the heart, and diseases of digestion The chapters regarding the care of infants, infant feeding, etc , are particularly valuable, giving the young mother much information that the physician would be glad to see in her hands Volume four, on exercise, long life, etc , has a long, copiously illustrated article by Dr Dudley A Sargent The chapter on "Diet and Hygiene for Long Life," by Sir Henry Thompson, and one on the "Preparation of Foods" by Janet M Hill, complete the volume Volume five comprises an article on sanitation by Dr Thomas Darlington, one on water supply and purification by William P Gerhard, with articles on pure food and management of houses, including plumbing, etc , while volume six, by S W Mitchell and S E White, take up the value of outdoor life in a practical way This volume is, in many ways, the most enjoyable of the series

This little set of six volumes is thoroughly commendable and should have a wide circulation The only difficulty is that those who need it the most are apt to see the least of it

THE STANDARD FAMILY PHYSICIAN A Practical International Encyclopedia of Medicine and Hygiene, Especially Prepared for the Household By Prof. Carl Reissig M D , of Hamburg, Germany and Smith Ely Jelliffe A.M M D Ph D Professor of Pharmacognosy Columbia University with the Assistance of American and German Specialists in the Treatment of Diseases and Experts in Medicine and Surgery Vols I and II Buckram Pp 1 050 Price $15 00 New York and London Funk & Wagnalls Co 1907

The need of a popular work on medicine that will not cater to unwise self medication will not be questioned On the intelligence of the layman in medical questions must depend the final outcome of the struggle between legitimate medicine and quackery and between society and the vicious habits and conditions which endanger the public health In the education of the lay public great aid may be afforded by an authoritative work on household medicine This desideratum is claimed to be supplied by the present work The plan of this work includes a treatise on anatomy, physiology and pathology, and an encyclopedic dictionary treating of those topics in medicine which would be likely to have interest for the average layman The first part occupies 97 pages of the first volume, while the dictionary completes the first and occupies most of the second volume The treatment of the anatomic and physiologic part is necessarily brief but, so far as our examination goes scientifically accurate The second part deals with special pathology, pharmacology, diet and nursing No exception can be taken to the accuracy of the facts stated and the descriptions of treatment give no encouragement to self medication The attitude toward quackery proprietary remedies, etc., is excellent The question arises, however, whether it is necessary to have so large and expensive a book as this Would not a work of average size and of a price within the reach of the average family be far better? An encyclopedic work like this one can be purchased only by the few and will be thoroughly read by still fewer of those who need to know its contents

ULCERATION OF THE CORNEA By Angus MacNab B A B Sc. etc Chief Clinical Assistant Royal London Ophthalmic Hospital Cloth Pp 190 Price $2 00 net New York William Wood & Co , 1907

This is a review of those numerous lesions of the cornea that are attended by loss of substance—no small proportion of the entire list of kertatitic processes Beginning with a description of methods of examination and pathologic modes of invasion, the author gives a full account of the bacterial lesions of the corneal tissues as primary manifestations Secondary infections of the cornea include diplobacillary ulcer, the infectious marginal ulcer of zur Nedden and those ulcerative processes that are seen with greater or less frequency in conjunctivitis resulting from the presence of pneumococcus Koch-Weeks bacillus, and the staphylococcus, as well as from conjunctival lesions in diphtheria and in gonorrhea MacNab then discusses the corneal ulceration that is so often associated with eczema and with so called trophic disturbances—keratitis neuroparalytica, corneal herpes, keratomalacia, etc In an appendix are considered the operations that are frequently demanded in serious ulceration of the cornea, among them Axenfeld's operation for excision of the lachrymal sac

A useful part of this section is formed by the directions for removal of material from an ulcer for bacterial examination, formulas for smear stains and useful observations on laboratory methods connected therewith Although the illustrations are poor and inadequate, the text is carefully written and reflects our latest and most reliable information on the subject

TEXT BOOK ON DISEASES OF THE HEART B G Steell M D F R C P Lecturer on Diseases of the Heart in the University of Manchester Senior Physician to the Manchester Royal Infirmary with an appendix on the Volume of Blood in Relation to Heart Disease By J L Smith M A M D Professor of Pathology in the University of Manchester Cloth Pp 389 Price $2 00 net Philadelphia P Blakiston s Son & Co 1906

In the preface the author states that "authority" has been excluded as far as possible in the description of the clinical aspects of the diseases of the heart, i e , the accounts are drawn "from life" This explains occasional omissions in the book and the fact that the author dwells with particular emphasis on certain points where he is, perhaps, rather at variance with authority In some places the book is somewhat on the quiz compend order, with mere enumeration of facts rather than logical consideration of them The chapter on the instrumental examination of the arteries and veins is timely and should whet the student s appetite for a more extended study of the writings of Mackenzie, Wenckenbach and others The work is hardly to be classed as a systematic treatise to be placed in the hand of the undergraduate but it is full of suggestive matter based on careful observation and fearless, original thinking and ought to be read by all specialists along the line of heart disease An interesting chapter of ten pages on the volume of blood in relation to heart disease is added by Dr J L Smith

ICONOGRAPHIA PARASITORUM HOMINIS Studies from the Zoological Laboratory of the University of Nebraska No 70 By Henry B Ward Paper Pp 25 Lincoln 1907

This is a collation of figures, with brief explanatory text, to aid in the study and diagnosis of the less common parasites of man The work is in the nature of an atlas and makes a handy reference for students of pathology and comparative medicine The plates are well made and are sufficiently diagramatic to show the points the author intends to make

TECHNIC OF OPERATIONS ON THE INTESTINES AND STOMACH By A. H Gould M D of Boston With 190 Illustrations Mostly Original Several of them in Color Cloth Pp 302 Price $5 00 Philadelphia W B Saunders Company 1906

A review of the book described in the above heading appeared in THE JOURNAL, July 27 1907 page 344, but by some mischance the wrong heading was placed on it so that the review appeared to refer to a work on the same subject by Finhorn

Miscellany

THE GREAT AMERICAN FRAUD

Nostrum Advertisements in the Religious Press—A Deserved Arraignment of Corruption in High Places

From time to time we have made reference in these columns to the abuses which have existed and still exist in regard to the class of advertisements carried by religious journals In last week's issue of *Collier's Weekly* the subject is treated at length by Samuel Hopkins Adams in his latest article on the Great American Fraud

"Religious journalism,' Mr Adams says, "props one corner of the tottering Great American Fraud Lend a quack or swindling 'patent medicine' vender the countenance of the church, and he is a made man Peruna and Duffy's Malt Whisky will spend freely, even extravagantly, *to get endorsements from the clergy, mostly* on the strength of the churchly title 'Father *John's' face*, exploited shamelessly on the boardings which display the dubious virtues of 'Father John's Medicine,' capitalizes the protesting but defenseless Roman Catholic priesthood for the profits of chicanery It is worth double his rentals for the scoundrelly Richie, D D, with his 'drug habit cure,' of concealed morphin, to head his correspondence 'Presbyterian Building, New York City,' and when the Board *of Home Missions*, which controls the building, discovered the real *nature* of his business and promptly turned him out, he lost a valuable asset For Dr J W Blosser of Atlanta to decorate his quack catarrh advertisements (principally in the religious press) with the ornament 'Rev' means thousands of dollars of added revenue What did that prosperous medical rascal and fraud, Dr W O Coffee of Des Moines, do when he found that *Collier's* was *looking into his* 'blindness and deafness cure' fake? Displayed an endorsement from the pastor of his church as a blanket defense Religious backing, of whatever kind, inspires confidence, and the only religious backing that is openly on the market is religious journalism"

CREDIT WHERE CREDIT IS DUE

In the effort to be fair THE JOURNAL has recently[1] given credit to those religious papers who either do not lend their pages to the exploitation of fraudulent nostrums or who are honestly striving to eradicate such as they have already contracted for Mr Adams gives a much larger list and comments as follows

"It must not be inferred, however, that all the prints which serve God in their editorial pages serve Mammon in their advertisements *There are journals, like the Unitarian Christian Register* the *Universalist Leader*, the New York *Christian Advocate* (Methodist), the Nashville *Christian Advocate* (Methodist), the Los Angeles *Tidings* (Roman Catholic), the *American Hebrew and Jewish Messenger*, the *Record of Christian Work*, the *Christian Herald*, the *Religious Telescope* (United Brethren), the *American Friend*, and *Forward*, which 'touch not the unclean thing' Others there are such as the New York *Churchman* (Episcopalian), the *Southern* (Atlanta) *Presbyterian*, the *Interior* (Presbyterian), *and* the *Epworth Herald* (Methodist) which, with an honest intention and a general policy of decency in advertising, occasionally, through inadvertence, admit fraudulent or dangerous 'patent medicines' to their columns"

CAVEAT EMPTOR[1]

One of the stock defenses of the religious journals that advertise nostrums, is, *that they* refuse, *yearly*, thousands of dollars' worth of advertising because of its objectionableness

Loud and clear in this choral offering *rises* the voice of the *Christian Endeavor World* The *Christian Endeavor World* is the 'official representative of the Christian Endeavor movement' displays, as its editorial motto, 'Continuing the Golden Rule' That is very good so far as it goes But, after studying its medical columns, I would suggest as a second motto, to be printed above its advertisements the warning, *Caveat emptor*' For the intending purchaser *may* well beware *in* reading the *man traps* which constitute so large a part of the *Christian Endeavor World's* patronage Clippings from a few issues, taken haphazard, show, in the line of medical advertising, eight obvious swindles, five dangerous quackeries and seven promised 'cures' for diseases which are incurable by medicine

"'Continuing the Golden Rule' Is *this continuing* the Golden Rule, to invite the unsuspecting sufferer to cure his own rheumatism by pasting a bit of sticking plaster, surnamed 'Magic Foot Drafts,' on the bottom of his feet, in the hope of 'drawing out the uric acid' by a species of mysterious suction? Or to lure him deeper into the slough of the drug habit by *involving him in the toils of the* Dr J L Stephens' morphin cure, which consists in giving him, *in secret form*, all the morphin he craves? Or to point him to the den of that arch faker of optical malpractice, Oren Oneal? Or to deliver him to the tender mercies of Dr Bye, of cancer ill fame, or of the remarkably Reverend Blosser, or of Gauss the 'catarrh specialist'? Is it doing unto others as you would have them do unto you, *to combine* with *the* swindler Kilmer in the vending of his 'Swamp Root,' or with *the bunco* artist Cheney in distributing his 'Hall's Catarrh Cure' with its fake $100 reward for any case it can not cure? Does the responsible publisher of the *Christian Endeavor World* really believe that 'crooked spines can be made straight' by mail? And that F W Parkhurst, 'the well known publisher of Boston,' having 'nothing to sell,' *yearns* to impart to the public, free of charge, his 'cure' for neuralgia and rheumatism? 'Continuing the Golden Rule,' indeed! Continuing the Golden Brick!"

MAKING A VIRTUE OF NECESSITY

The rejected advertising spoken of is as a rule merely of those products that are either outspokenly alcoholic in content or such as have been so thoroughly exposed through the press that the publishers dare not accept their advertisements Says *Collier's*

"The rejections are too often formal and literal, rather than based on any principle The Duffy's Malt Whisky concern (whose product is both a fake medicine and a poor whisky) told me that they were constantly appealed to by church papers to advertise under the *name* of 'Duffy's Malt' *or* 'Duffy's Malt Remedy' 'So long as you use the word whisky,' say the pious minded publishers, 'we can not, of course, admit you to our columns' That the preparation, with murderous mendacity, claims to cure tuberculosis and pneumonia makes no difference to their eagerness for a share of its earnings *The reek of blood itself* will not revolt them, but the smell of alcohol sends *their hands up in holy horror* Thus a fine old blended quackery like Peruna will be refused, on the ground that it is a known intoxicant, by religious editors who accept readily enough medical lures to the enslavements of morphin, or even the claims of preparations for the producing of abortion"

EDITORIALS FOR SALE

Even the editorial columns of some of these journals are open to the purveyor of nostrums

"The *Christian Century* of Chicago formerly performed this service for its patrons, Oren Oneal and P Chester Madison, through the pen of its editor, Charles A Young, but either *through a change of heart or a change* of editor (both, I suspect) it has forsworn such practices and now comes out with a definite announcement that no suspicious or fraudulent advertising will be admitted to its columns, a pronunciamento which its recent issues certainly bear out, so far as medical advertising goes That so radical a change of policy should have been put in force is indicative of the recent awakening in *religious journalistic circles*

"The 'editorial *puff' market* is not depleted, however For any who wish to buy, the Rev C H Forney D D, LL D, editor of the *Church Advocate* of Harrisburg Pa is on the bargain counter 'Organ of the Churches of God' the *Church Advocate* terms itself Among other assorted rascalities, it publishes the advertisement of Dr W O Smith, 'Specialist,' who deals in *'free medical advice by mail'*

"'Dr Smith, proclaims *the advertisement* has *adopted* a method by which he can diagnose chronic diseases and successfully treat them at a distance Dr Smith has discovered a Positive, Radical, and Safe cure for all forms of Nervous Chronic and Special Diseases, such as Weakness in the Back and Limbs, General Debility, Impotence, Lack of Confidence Nervousness Langour (*sic*), Confusion of Ideas, Palpitation of the Heart Timidity *Trembling of the Limbs* Dimness of Sight or Giddiness Diseases of the Throat, Head Nose Stomach Liver, and Kidneys Skin Diseases of All Kinds Blood Poison, Nervous and Vital Weakness, Catarrh Rheumatism Dropsy, Asthma Chronic Bronchitis, Diseases of Women and all Chronic, Lingering Complaints of Both Sexes Take one Candid Thought *before it is too late A Week or Month may place your case beyond the Reach of* Hope

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[1] THE JOURNAL July 6 1907 page 53

"No intelligent person can read that advertisement without knowing that Dr W O Smith, 'Specialist,' is a charlatan of the most malignant description But it is not for the intelligent, but for the suffering and hopeful ignoramus that Dr Smith's bunco game is prepared And here, in the *Church Advocate's* editorial columns—*editorial*, mind you—we behold the Rev C H Forney, D.D, LL.D, acting as 'barker' for the quack.

'The use of electricity in therapeutics is of comparatively *(sic)* recent *origin*, and its value is not generally known today, yet in its application to medicine and surgery it has been found to be of special efficacy The variety of diseases for which it may be employed with the best results is indicated in the advertisement of Dr W O Smith, which may be *found on another page* As Dr Smith is a well known specialist in this line of his profession, a worthy and reliable gentleman we take pleasure in recommending him to our readers You run no risk whatever in consulting him'

"The Richmond *Religious Herald* which is filled with quackery of all kinds willingly prints as reading matter, *in exact* imitation of a legitimate paragraph, exploitations of Dr D M. Bye's cancer 'cure,' and of Vitæ-Ore For thus deceiving its own subscribers it receives an extra rate from the charlatans"

EXCUSES THAT DO NOT EXCUSE

As an excuse for its delinquencies "the *Baptist Watchman* of Boston publishes a defense of patent medicine advertising which embodies certain of the arguments furnished in the 'canned editorials' sent out by the Proprietary Association of America 'There are many medicines and much medical practice which ought to be condemned,' writes the editor, 'and the *Watchman* will not knowingly approve or aid either in any way whatever There are also many proprietary medicines which are simply physicians' prescriptions or methods which have proved successful in private practice, and which are advertised simply to give them a wider usefulness The *Watchman* rejects advertisements all the time of those things which may reasonably be objected to'

"An excellent platform if lived up to But the *Watchman* is jam full of advertisements of both kinds the legitimate proprietary remedies and the arrant shams—mostly the latter Is there no reasonable objection in the mind of Edmund F Merriam editor of the *Watchman*, to Piso's Consumption Cure, which, under the Pure Food Law, has been forced to change its name on the labels (though not in its advertising) because its claim to cure consumption is baldly fraudulent? Is not Mrs Winslow's Soothing Syrup, with its enslaving morphin a patent medicine which 'may reasonably be objected to'? Will Editor Merriam explain by what phenomenon of logic or elasticity of ethics he accepts the lucubrations of Dr Bye, or Oren Oneal, of Liquozone, of Actina, that marvelous two ended mechanical appliance which 'cures' deafness at one terminus and blindness at the other, and all with a little oil of mustard, and of Mrs M Summers of Notre Dame, Ill, who in print yearns to impart to suffering humanity a sure cure for rheumatism, kidney troubles, and women's diseases but who, in a composite photograph, would exhibit a full beard and a bass voice, and answer to the description of Vanderhoof & Co, patent medicine fakers? Finally, has the *Watchman's* editor noted, by any chance, that Dr Farrar of Boston, one of those leeches who claim to cure rupture 'without the knife or pain' embodies this significant sentence in his advertisement in the *Watchman's* columns *'Inquire of Publisher of this paper'* If this does not mean that the *Watchman's* editorial endorsement is thrown in as a bonus when a quack purchases advertising space then what does it mean? On the other hand, be it said to the paper's credit its editorials fly in the face of its patent medicine patrons by advocating a law 'requiring the full formula on all proprietary 'remedies'"

THE MOTE AND THE BEAM

The human tendency to magnify the mote in our neighbor's eye and totally overlook the beam in our own, is beautifully exemplified in some editorial writings in the religious press

'For example, the *Gospel Advocate* of Nashville, Tenn, is quite sure" says Mr Adams, "that the country is approaching ruin through cigarettes, and it further opines that 'the use of the organ in worship is a growing sin in our churches' I have heard some pretty bad organists myself, but if I edited the *Gospel Advocate* I should clean up my pages a little before setting out to save my fellows from going to perdition via the music route As a start, the editor might throw out his cancer cures Vitæ-Ore Mrs Summers (the bearded lady of Notre Dame) Winslow's Soothing Syrup, the Reverend Blosser and the quack Dr Hathaway Later he might continue the good work by casting out the various lesser chicaneries which dubiously decorate his paper, at the end of which house-cleaning he could, with a better grace, tackle the body destroying cigarette and the soul destroying pipe organ

"To the sensitive spirits of the Baltimore and Richmond *Christian Advocate* it is a lamentable thing that terrified Italians, during an earthquake, should have fallen on their knees and prayed to the saints An editorial on this topic is headed 'Roman Catholic Superstition' What kind of superstition is it which the *Christian Advocate* incites in its readers when it points them to A I M (Acid Iron Mineral), purporting to be a cure for anything from eczema to snake bite, with a special claim as a remedy against bleeding to death? Winslow's Soothing Syrup, Vitæ Ore, the Kellam Cancer Hospital, the Jackson 'free' rheumatism cure, and Dr J W Blosser of catarrh cure fame, who is *sometimes* a Rev Dr and *sometimes* a medical doctor, and at all times a fraud, also appear as appellants to the particular type of superstition which the editor of the *Advocate* fosters Though not a Roman Catholic, I should much rather appeal for help to a saint in the event of earthquake than to Kellam or Blosser in case of cancer or catarrh

"'Dr Buckley has done the Christian public a vast service in his exposures of Christian Science,' approves G C Rankin D D, editor of the *Texas Christian Advocate*, writing of Dr J M. Buckley of the New York *Christian Advocate* This is all very well for Dr Rankin, Christian Science does not advertise in Dr Rankin's publication, therefore that politic person can commend attacks on it with a free heart But Dr Buckley, in the New York *Christian Advocate*, has for years been waging a relentless war not only on Christian Science but also on the fraud medicines and 'sure cures which *do* advertise in Dr Rankin's journal Does Dr Rankin exhibit any irrepressible enthusiasm over this phase of his brother laborer's energetic work? Not so far as has appeared Masterly silence has been the keystone of his strategic policy in this respect And with sound reason for if one cuts out from any single issue of Dr Rankin's *Texas Christian Advocate* all the foul, indecent, dangerous, and mendacious paid matter, the remnant resembles a pattern for a broad mesh mosquito netting Cancer quacks dropsy quacks, private disease quacks all find equally hospitable refuge at so much per line, in Dr Rankin's columns One enterprising person attains the height of absurdity by advertising, under the self bestowed title of 'The Texas Wonder,' to cure all kidney and rheumatic troubles by mail for $1 Another advertisement (which most daily papers throw into the waste basket) comes near the depth of degradation in exploiting 'Man Medicine' Since this reverend gentleman so admires Dr Buckley, I would respectfully suggest that he make a careful study of that militant editor's advertising pages, for therefrom he will learn vastly to his surprise, very likely, that it is possible for one of his own faith and church to publish a religious journal, and a successful religious journal whose advertising pages are clean honest and independent of a dollar's aid from any exponent of the Great American Fraud"

THE UNDENOMINATIONAL PRESS

After dealing specifically with the denominational press, Mr Adams turns his attention to the undenominational press, which he claims does not shine by comparison

"The *Christian Work and Evangelist* prints the lures of Sproule, Mrs M Summers of Notre Dame Dr Bye, Piso's Consumption Cure and Winslow's Soothing Syrup, those twin 'dopes,' and Alice A Wetmore, who has discovered a 'perfect home cure for heart disease The *Ram's Horn* excludes from its pages 'everybody and everything that we believe might abuse the confidence of our readers' What a singularly touching trust is that of the *Ram's Horn* in its advertising patrons, when to go no farther, it implicitly expresses its confidence in the thieving Dr Coffee of Des Moines, and in Oxydonor which modestly promises to cure not only all nervous complications, but such simple ailments as pneumonia and locomotor ataxia! The list might be indefinitely prolonged extending from publications which will print anything in which there is a dollar to those which exclude open quacks and dangerous medicines, but accept the comparatively harmless but essentially mendacious claims of such proprietaries as Cuticura Soap and Stuart's Dyspepsia Tablets"

The article as a whole is a serious indictment of the religious press, but an indictment, we regret to say, which is deserved There are several "telling" illustrations which add immensely to the effectiveness of the article but to which we regret we can not give space

Right to Practice Taken from Two Advertising Quacks

The Missouri State Board of Health has shown a singular lack of appreciation of the claims of Drs Bye and Johnson, the notorious cancer specialists These enterprising gentlemen after long years of study of the cancer problem (it is said that the preparation of Dr Johnson's book on cancer took the patient work of two weeks, with the aid of a modern advertising agency) had endeavored to put before the public the results of their work, but the board, in a manner as heartless as that in which these men misled and bled their victims, has decided that such scientific effort is unprofessional advertising and has revoked their licenses From the *Independent* (Kansas City), August 3, we take some of the details

In the trial of Dr Johnson, who proved to be a young man, although he was said to have "devoted long years to a study of cancer,' a beautifully prepared pamphlet, entitled "Cancer and Its Cure," was introduced in evidence, with such choice bits marked as these

> "In this little volume I wish to tell the true story of a wonderful cure for cancer in all its forms"
>
> "The correct principle of my treatment is recognized by all schools of medicine My Mild Combination Treatment eliminates the deadly cancer poison"
>
> "Warts, moles and scars develop into cancer'
>
> "My method of treatment is indorsed by many capable surgeons and physicians"
>
> "It is easy to be treated at home and treated successfully by my method You have but to fill out symptom blank which I furnish you and return it"

This philanthropic method received the most cruel treatment from the prosecution before the board, affidavits being introduced to show that these statements were inaccurate and tended to mislead the public, thereby making it possible for Johnson to practice deception on many ignorant but afflicted persons and that his treatment has no standing whatever The *Independent* gives the following account of part of the examination

> Like a flash the lawyers dipped into 'Doctor' Johnson's life proved that his 'long years of study' consisted of short courses at poor schools, and that his great work was written in 'two or three weeks" with the aid of an advertising firm Dr Lutz of the board, took charge of the witness for a while and tore his medical pretensions to pieces in a manner that really elicited pity from those around Dr Lutz proved that Johnson knew absolutely nothing about cancers at all, that he couldn't even tell the difference between cancer and a common ulcer—that he was a fake of the first water
>
> Shortly before the noon adjournment the board members asked him if he would have any objection to telling what his Mild Combination Treatment' consisted of and appointed Dr J D Griffith as a committee of one to receive the information
>
> When Dr Griffith took the stand after luncheon he stated that Johnson had shown him some ordinary salves and pastes mostly zinc preparations, such as everybody used for ulcers and sores and that when asked if that was all his Mild Combination Treatment consisted of answered that he had a 'secret salve' he would show
>
> Dr Frank J Hall's affidavit was then read Dr Hall is professor of pathology in the University of Kansas and what his affidavit did to Johnson comes under the head of cruelty to animals He branded his statements as falsehoods and his claims as being of a 'character that tends to mislead and deceive the public to wrongfully impose on the fears, weakness or ignorance of the sick and credulous and to defraud the people by false and impossible claims in regard to the treatment of disease'
>
> Dr Herman E Pearse a physician and surgeon known all over the West took the stand for the state and looking Johnson square in the eyes said Johnson's statements are lies, and he knows that they are lies'

Dr Johnson's lawyer put in the plea that "every advance in the truth had been met by opposition," but the board seemed determined to follow the precedents of other inquisitors and ignored the fact that scientific investigation had been accelerated and modified by modern business methods Doubtless many of the long years of investigation were spent in a previous existence and the remarkable Dr Johnson has come to this earth with some quickened powers which enable him to escape the limitations of ordinary mortals

Evidently Dr Bye is a member of a large family in Kansas City and Indianapolis, as was shown up by Samuel Hopkins Adams in his great American fraud articles The father and three sons have devoted themselves with religious unction and commendable zeal to the accumulation of fortunes by the "Combination Oil Treatment' of cancer The father is reputed to be a good man, he is said to run a church at his own expense When arraigned before the board Dr Bye was not permitted by his attorney to testify, but the board proceeded to quote his pamphlet and on the accusation of making false claims took away his license

Dr Bye, like Dr Johnson would seem to have discovered the fountain of perpetual youth for arduous labors and the anxiety attendant on treating thousands of cases of cancer have not aged him nor have the miseries of his helpless victims depressed his spirits The *Independent* thus describes his appearance

> Instead of a gray headed old man worn out with laboratory toil eyes dimmed by poring over huge tomes there bounced forward a young chap of 25 or 30 goggle eyed smooth faced in no wise differing from scores of other young chaps except for a look of cold blooded craft

According to the "American Medical Directory" both Bye and Johnson were graduated in 1897 from Bennett Medical College, Chicago, an eclectic institution According to Polk's directory, in the same year, 1897 they graduated from the Northern Illinois College of Ophthalmology and Otology, although just what this institution is, or where it is located, we do not know The Missouri State Board of Health is to be congratulated on what it has done in this particular case We understand that there are other advertising quacks in Missouri whose cases have been investigated by the board

The Stria Vascularis—In describing the origin of the cells found in the deeper layer of the stria vascularis, George E Shambaugh, in the *Archives of Otology*, June, 1907, says that the blood vessels of the stria are placed directly beneath the surface layer of epithelium and as soon as formed are enveloped in protoplasmic processes from the surface layer In addition, the cells immediately around the blood vessels are clearly derived from the surface layer of epithelium The cells found in the deeper layer, therefore, are in part epithelial and in part connective tissue He believes we are justified in assuming that the stria vascularis represents true vascular epithelium

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION CONTRACT PRACTICE INSURANCE FEES, MEDICAL LEGISLATION, ETC

Organization Bulletin in Utah

The first number of the *Physician's Bulletin*, published by the Third Councilor District Society of Utah, contains the registration provisions of the new medical practice act of Utah, announcements of the next meeting of the society and a large number of organization notes The summer meeting of the society will be held on Tuesday and Wednesday August 13 and 14 Following the meeting, fishing and camping parties, made up of members and their families, will visit the southern lakes of Utah and the Grand Canyon of the Colorado Dr Frederick Clift of Provo, councilor for the district and president of the society, is the editor of the bulletin

Iowa Law Amended

The May number of the *Iowa Health Bulletin* contains the text of the amendment to the Iowa practice act empowering the State Board of Medical Examiners to revoke the license of any physician in the state "who is not of good moral character or who solicits professional patronage by agents, or who profits by the acts of those representing themselves to be his agents, or who is guilty of fraudulent representations as to his skill and ability, or who is guilty of gross unprofessional conduct or incompetency or for habitual intoxication or the drug habit, or if the certificate has been granted on false and fraudulent statements as to graduation or length of practice" The amendment also makes provision for the manner of revoking the license and provides that the physician shall have an opportunity to appear for a hearing in person or by counsel If he fails to appear the board is authorized to revoke his certificate If he appears, the board may receive and consider affidavits and oral statements bearing on the case If five members of the board are satisfied that the licentiate is guilty of the offense with which he is charged, the license shall be revoked, after which the holder thereof shall not practice medicine, surgery and obstetrics in the state of Iowa for such a time as the State Board of Health may determine Any person aggrieved by any rule or order entered under the provisions of the act is given the right of appeal to the district court in the county where the alleged offense was committed, on giving notice to the Board of Medical Examiners of such an appeal within twenty days after the entry of the ruling, order or judgment

ITINERANT PHYSICIANS

The bulletin also contains an opinion from the attorney general of the state on the question of licenses for itinerant physicians, to the effect that itinerant physicians must be licensed the same as any other physicians practicing medicine in Iowa, that such license is obtained on the presentation of satisfactory evidence to the board of the possession of proper qualifications, and that the board has discretionary power as to the granting or refusing of such a license This decision of the attorney general fully sustains the position of the secretary of the board

Insurance Fees

The Hendricks County (Ind) Medical Society has unanimously adopted the Kentucky resolutions regarding life insurance examinations

The Adams County (Ohio) Medical Society has adopted the following resolutions which were drawn up by the committee on life insurance All the registered physicians of Adams County have agreed to abide by this action

Whereas, Many of the life insurance companies have notified their medical examiners of a reduction of examining fees from five to three dollars and

Whereas We, as physicians realizing the responsiblity incident to and the time required in completing a proper examination believe such reduction to be unjust and

Whereas Some of the life insurance companies have always paid and are now paying a minimum fee of five dollars for examinations where the amount of the policy is not less than one thousand dollars therefore be it

Resolved That we, the undersigned members of the Adams County Medical Society do hereby declare such reduction to be unjust and that any fee less than five dollars for examinations, where the amount of the policy is not below one thousand dollars is inadequate and

Resolved That on and after Sept 1 1907 no one of us will make any examination of any applicant for life insurance where the amount of the policy is not below one thousand dollars for a less fee than five dollars and

Resolved, That the above named rates do not apply to industrial medical inspections without urine analysis for amounts less than one thousand dollars or to examinations for benevolent organizations and

Resolved That no one of us shall enter into any contract or agreement with any corporation society association company or individual to examine applicants for any stated salary or lump sum thereby evading the spirit and instinct of the foregoing resolutions and be it further

Resolved That the payment of all fees shall be authorized by the home office of the society or corporation to which such application is made and under no circumstances shall an examiner receive or accept any part of the fee from an agent or other person or corporation unless the full fee be paid by authority of the home office

Marriages

William B Hanelin, M D, to Miss Marion Perbohner, both of Chicago, July 31

Daniel J Donnelly M D, to Mrs Jennie J Brown, both of Philadelphia, July 24

Edwin I Thayer M D, to Miss Minna Lindenmayer, both of Philadelphia, July 17

James Clement Harkins M D, to Miss Mary Clune, both of New York City, June 3

H M Stanley, M D, Corning, Iowa, to Miss Sarah O Coy of Sheridan, Mo, June 26

Albert R Tucker, M.D, Mohawk, Mich, to Miss Lila C Foley of Eagle Harbor, Mich, June 26

S Alford Blackburn, M D, to Miss Laura Browning, both of Versailles, Ky, at Midway, Ky., July 24

Lunsford D Fricks, M D passed assistant surgeon, U S P H and M H Service, Fort Stanton, N M, to Miss Edna Grace Beene of Chattanooga, Tenn, at Alamogordo, N M, July 22

Deaths

William Thomson, M D Jefferson Medical College, Philadelphia, 1855, a member of the American Medical Association, who entered the Army as assistant surgeon in 1861, was afterward on duty at the headquarters of the Army of the Potomac, surgeon in charge of the Douglass Hospital and medical inspector of the department at Washington, was given two brevets, but resigned from the Army in 1866, who is said to have been the first to employ the local application of carbolic acid as a wound disinfectant, for 25 years professor and thereafter emeritus professor of ophthalmology in Jefferson Medical College, consulting surgeon to Wills Eye Hospital, an ophthalomogist of renown, who with Dr W S Norris is said to have made the first successful microphotographic negative in 1864, died at his home in Philadelphia, August 3, aged 74

William Travis Howard, M D Jefferson Medical College, Philadelphia, 1844, one of the founders of the American Gynecological Society, and its president in 1895, president of the Medical and Chirurgical Faculty of Maryland in 1903, for 30 years, up to 1897, professor of gynecology in the University of Maryland School of Medicine, and thereafter emeritus professor, consulting gynecologist to the Union Protestant Infirmary, gynecologist to the Hebrew Hospital and Asylum Association of Baltimore, consulting physician and surgeon to Johns Hopkins Hospital, and one of the founders of the Hospital for the Women of Maryland, died at Narragansett Pier, R I, July 31, from ptomain poisoning, after a brief illness, aged 86

William F Boor, M.D Jefferson Medical College, Philadelphia, 1853, surgeon of the Fourth Indiana Cavalry, and later surgeon of the First Brigade, Second Division, Army of the Cumberland, during the Civil War, a charter member of the Indiana State and Henry County medical societies, for more than 12 years school trustee, one of the organizers and successively director, vice president and president of the First National Bank of Newcastle, Ind, died at his home in that city, from paralysis, July 17, aged 88

James Buckner Killebrew, M.D University of Virginia, Department of Medicine, Charlottesville, 1896, a member of the American Medical Association, visiting gynecologist to the Mobile City Hospital, president of the Mobile County Medical Society, and adjunct professor of gynecology in the Medical College of Alabama, Mobile, jumped from an automobile to avoid a collision with a freight train, fell beneath the wheels of the train and was killed instantly, July 24, aged 35

Lucy Hall-Brown, M.D University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1878, member of the Brooklyn Pathological Society, Kings County Medical Society and American Electro Therapeutic Association, vice president of the American Social Science Association, a member of the council of the National Red Cross Society, died at her home in Los Angeles, August 1, after a long illness

Harvey B Dale, M D Rush Medical College, Chicago, 1887, Chicago Homeopathic Medical College, 1888, for several years a member and once president of the board of education of Oshkosh, Wis, some time city physician and health commissioner, and a member of the State Board of Medical Examiners in 1895, died at St Mary's Hospital, Oshkosh, a week after an operation for appendicitis, aged 42

Orlando S Reynolds, M.D University of Pennsylvania, Department of Medicine, Philadelphia, 1902, formerly interne at the Episcopal Hospital Philadelphia, and later a practitioner of McDowell County, W Va a member of the West Virginia State Medical Association and Mingo County Medical Society died at the home of his father in Keyser, W Va, July 26, from typhoid fever, aged 28

David R. Sanders, M D Medical College of Ohio, Medical Department University of Cincinnati, 1877, a member of the Illinois State and Union County medical societies, a veteran of the Civil War, first assistant superintendent of the Illinois Southern Hospital for the Insane, Anna, died at that institution, July 22 from disease of the stomach, after a short illness, aged 62

Morris H. Goodrick, M D Homeopathic Hospital College, Cleveland, Ohio, 1881, an alderman of Jacksonville Ill, some time city health officer, health officer of Morgan County and physician to the Illinois State School for the Blind, died at his home in Jacksonville, July 28, from uremia, after an illness of two weeks, aged 50

Charles E Davis, M.D New York University Medical College, New York City 1878, of Peoria,, a member of the Illinois State and Peoria County medical societies, died at St Francis Hospital, Peoria, July 24, from nephritis, after an illness of nearly two years, aged 58

Benjamin Combe Hopkins, M D Jefferson Medical College, Philadelphia, 1855, during the Civil War in charge of a military hospital in Philadelphia, after which he removed to Dunmore, Pa, died at his home in that place, July 22, after an illness of several weeks, aged 77

Lee McElroy, M.D Northwestern University Medical School, Chicago, 1905, for two years an interne at the Alexian Brothers' Hospital, Elizabeth, N J, died at that institution, July 26, from cancer of the gall bladder and duodenum, after an illness of two months, aged 30

Fleet John Cooper, M D College of Physicians and Surgeons, Baltimore, 1884, a member of the Medical Society of the State of North Carolina and Sampson County Medical Society, died at his home in Roseboro, N C, July 11, after an illness of several weeks, aged 47

John Clark Budlong, M.D Hahnemann Medical College and Hospital, Philadelphia, 1863, a member of the board of aldermen of Providence, R. I, and surgeon general of the state for 20 years, died at his home in Providence, July 25, after a long illness, aged 70

J R Howell, M D University of Georgia, Medical Department, Augusta, 1904, a member of the Medical Association of Georgia and Irwin County Medical Society, died at his home in Ocilla, Ga, July 24, from typhoid fever, after an illness of one week

Gideon Raus Gwynne, M.D Medical Department of the University of Nashville, Tenn, 1869, a veteran of the Civil War and for many years health officer of Lebanon, Tenn, died suddenly from angina pectoris, at his home in that city, July 23, aged 67

Edgar Eltinge, M D College of Physicians and Surgeons in the City of New York, 1852, a member of the Kings County Medical Society, and for many years a practitioner of Brooklyn, died at his home in Kingston, N Y, July 28, aged 79

James P Tormey, M.D Bellevue Hospital Medical College, New York City, 1891, a practitioner of San Leandro and Haywards, Cal, died in the Southern Pacific Hospital, Sacramento, Cal, July 23, after a prolonged illness, aged 40

Philip E Blesch, M.D Starling Medical College, Columbus, Ohio, 1868, one of the best-known German practitioners of Columbus, died at his home in that city, July 31, from diabetic gangrene, after an illness of five years, aged 62

Robert Durham (Examination, Tenn, 1889), a practitioner of Sumner County, Tenn, for more than 40 years, died at his home in Pleasant Grove, June 11, from pulmonary abscess, after an illness of three weeks, aged 74

Rudolph L Dodge, M.D Boston University School of Medicine, 1875, of Portland, Maine, a veteran of the Civil War, died suddenly from heart disease, while riding in his automobile near Pride's Corner, Maine, July 28, aged 66

John R. Cottongim (License, Tenn, 1889), for 40 years a practitioner of Teague, Tenn, died at his home in that place May 28, from cerebral hemorrhage, after an illness of more than a year, aged 67

Kimber Charles Cleaver, M D Medico Chirurgical College of Philadelphia, 1896, of Freidensburg, Pa, died in the Pottsville (Pa) Hospital, July 18, after an operation for appendicitis, aged 37

Fred Miller, M.D Ohio Medical University, Columbus, 1902, once coroner of Tuscarawas County, Ohio died suddenly at his home in Mineral City, Ohio, from cerebral hemorrhage, July 18

James Turpin, M.D Eclectic Medical Institute, Cincinnati, 1882, of Rockport, Ind one of the oldest practitioners of the state, died at his home in that city, July 22, aged 82

Joseph Walter Lesslie, M.D Toronto University Medical Faculty, 1880, of Toronto, died suddenly at his home in that city, July 17, from cerebral hemorrhage, aged 54

John B Summers, M.D Bellevue Hospital Medical College, New York City, 1876, of Milton Ind, died at his home in that place, July 17, after a long illness, aged 66

Carl Gustav Tell, M.D Homeopathic Hospital College, Cleveland, 1881 of Braddock, Pa., died at his home in that place, July 23, after a prolonged illness, aged 58

William H. Hill, M D University of Louisville (Ky), Medical Department, 1873, died at his home in Russellville, Ark from heart disease July 29, aged 56

John S McBean, M D Medical College of Ohio, Medical Department, University of Cincinnati, 1872, died at his home in Cadiz, Ohio, July 27, aged 67

James David Hill, M.D College of Physicians and Surgeons, San Francisco, 1900, died at his home in San Francisco, July 25, aged 38

William T Norris, M D Columbus (Ohio) Medical College, 1892, died at his home in East Liverpool, Ohio, July 30, aged 45

Frank Leslie Hazlett, M.D Jefferson Medical College, Philadelphia, 1903, of Butler, Pa, died near Parker, Pa, July 26, aged 29

Belle A Foote, M.D Hahnemann Medical College and Hospital, Chicago, 1906, died at Richland, Iowa, July 11

Death Abroad.

J J Grancher, M.D, of Paris, died July 13, 1907, at the age of 64, of a grippal pneumonia lasting only a few hours, although he had been engaged in a struggle against chronic disease for 35 years He was admitted to the doctorate in 1873 and produced a thesis on the unity of tuberculosis opposing the doctrines of Niemeyer and others who at that time advocated the distinction of phthisis from tuberculosis Grancher devoted much of his attention to the study of diseases of the lungs and especially tuberculosis in children He assisted Pasteur in his researches on rabies, and it was to him that the first attempts at antituberculous vaccination were due He was the first to describe the form of pneumonia known as "splenopneumonia," which has sometimes been called "Grancher's disease" While somewhat difficult of approach, he was of a generous disposition and identified himself with several philanthropic works The most prominent of these was the work for the protection of childhood against tuberculosis by which he endeavored to save the healthy children of tuberculous parents from this plague He was honored with election to the Academy of Medicine, and was a member of the consulting committee of hygiene of France, president of the administrative board of the Pasteur Institute, and commander of the Legion of Honor

Queries and Minor Notes

CHAMPAGNE TABLETS

BROOKLYN, July 28, 1907

To the Editor—Has the American Medical Association done anything with "Champagne Tablets," or can you tell me anything about them? From their action I think that they contain cocain

LOUIS C AGER, M D

ANSWER.—Champagne tablets were examined by the Massachusetts State Board of Health and each tablet was found to contain 05 gm, or nearly one grain, of caffein They have not been investigated by the Council on Pharmacy and Chemistry

ASKS ORIGIN OF DRAM AND OUNCE SYMBOLS

Dr E H Terrell, Richmond, Va, asks the origin of the symbols ʒ and ℥, and also of the symbol for a scruple

RELATION OF ANTITOXIN TO DIPHTHERIA MORTALITY

To the Editor—I want any information you can give me on antitoxin showing the number of cases treated with antitoxin and the number of deaths, and the same without antitoxin, especially in the recent Chicago epidemic.

N K

ANSWER—The second edition of Hare's "Practice of Medicine" 1907, gives some statistics on a large scale which may be useful Roux compared the death rate of two large children's hospitals in Paris, one of which used antitoxin and the other did not The mortality under antitoxin was 26 per cent, while at the same period the mortality without antitoxin was 60 per cent. From Oct 1 1894 serum therapy was practiced at the Hôpital Trousseau, with the result that at the end of two months the mortality had fallen from 60 per cent to 14 85 per cent Hare says (p 183) 'The largest and most valuable statistics are those of Bayeux who collected more than 200 000 cases from all parts of the world and found that the average mortality rate was 16 per cent. Making a most conservative estimate of the general mortality of 35 per cent in pre antitoxin days, Bayeux's figures prove a reduction in mortality of more than 50 per cent since the introduction of antitoxin In the first nine years during which antitoxin was used in Chicago the mortality was 6 088 while during the nine years preceding the use of antitoxin the mortality was 11 488 a decrease of 47 per cent, although the population had increased nearly 600 000, or 52 per cent If this increase in population is taken into consideration the decrease in the mortal ity of this disease under this plan of treatment is 63 per cent. In New York City, out of 1 702 patients injected on the first day including moribund patients, only 85 died—a case mortality of 4 99 per cent. The Chicago Health Department reports that it has no data on diphtheria treated without antitoxin but gives the following information At present very few cases of diphtheria in Chicago are treated without antitoxin at some time in the course of the disease. Sometimes there is a delay in administering antitoxin as the deaths from the disease show From Oct. 5, 1895 to Dec. 31, 1906 8,372 cases of bacterially verified diphtheria were treated with antitoxin by the Chicago Health Department, with the *following results*

	INJECTION MADE ON					
	1st day	2d day	3d day	4th day	Later	Totals
Number cases treated	624	2 181	2,926	1 578	1 063	8 372
Number deaths	2	33	99	176	234	544
Per cent of deaths	0 32	1 51	3 38	11 15	22 01	6 50*

* The average mortality per cent of all cases is 6 50

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U S Army, week ending Aug 3 1907

Eastman Wm. E., asst surgeon granted 30 days leave of absence with permission to apply for thirty days extension

Flagg C. E. B., asst surgeon, leave of absence extended thirty days

Wales, P G, surgeon, relieved from duty at Fort Wayne, Mich, and ordered to Fort Apache Ariz for duty

Field Peter C, asst. surgeon will on arrival at San Francisco, proceed to Fort Wayne, Mich. for duty at that station.

Davidson W L asst. surgeon assigned to duty as surgeon of the transport *Logan* during voyage to Manila sailing from San Francisco Aug 5 1907 On arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty

Snoddy C A. asst. surgeon leave of absence on account of sickness, extended 30 days

Halloran P S asst surgeon ordered to accompany Battery C, Fifth Field Artillery to Fort Des Moines Iowa, for duty during the Iowa Militia maneuvers near Des Moines, Iowa, from Aug 5 to 12 1907

Banta W P asst surgeon ordered to proceed from San Francisco to Fort D A. Russell Wyo for station and duty

Winter F A. surgeon, left post, Fort Myer, Va, Aug 1, 1907 on 10 days leave of absence.

Morris, E. R. surgeon, relieved from duty at Fort Logan Colo, and on expiration of present sick leave, ordered to Fort Thomas, Ky for duty

Long C J dental surgeon, relieved from duty at Fort Snelling, Minn and ordered to San Francisco, to sail on first available transport for Philippine service.

Treuholtz C A. contract surgeon, granted leave of absence for two months

Hereford, J R. contract surgeon ordered from Fort Oglethorpe, Ga to his proper station Fort Dade, Fla

Ashburn, J K., contract surgeon, granted leave of absence for ten days

Roberts, E. B contract surgeon, granted leave of absence for ten days.

Lemmon, Robt., contract surgeon, granted leave of absence for ten days.

Cullen C. W contract surgeon ordered from Fort Sam Houston, Texas to camp at Leon Springs Texas for duty

Trotter Tyler George contract surgeon ordered from Fort Hamilton N Y to Fort Adams R I, for duty

Tetrault, C. A. contract surgeon ordered from Southbridge, Mass to San Francisco to sail thence September 5 for Philippine service.

Rion C. L. dental surgeon ordered from San Francisco to Paris, Ky for annulment of contract.

Navy Changes

List of changes in the medical corps U S Navy, for the week ending Aug. 3, 1907

Bishop L. W P A. surgeon unexpired portion of leave revoked, ordered to the *Missouri* August 1

Bunker C W O acting asst. surgeon ordered to the *Lancaster*

Chappelear F D acting asst surgeon, resignation accepted to take effect July 31 1907

Murphy J A., surgeon, detached from the *Des Moines* and ordered to the *Dolphin*

Tolfree H M., P A. surgeon, detached from the *Dolphin* and ordered to the *Des Moines*

Alderman C. G asst. surgeon, ordered to the Naval Hospital Puget Sound Washington

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and non commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 31 1907

Banks C E., surgeon leave of absence granted for one month from June 20 1907 amended to read 28 days only

Smith, A. C. surgeon, directed to proceed to Wheeling, W Va. for special temporary duty on completion of which to rejoin his station at Pittsburg

Frick L D P A surgeon granted leave of absence for 7 days from July 22, 1907, under Paragraph 191, Service Regulations

Goldberger, Joseph, and McCoy, G W P A surgeons directed to proceed to Brownsville, Texas and other places in that portion of the state for special temporary duty, on completion of which to rejoin their stations in Washington, D C

Warren B S, P A surgeon relieved from duty at Boston and directed to proceed to Chicago reporting to the medical officer in command for duty and assignment to quarters

Trask J W asst surgeon, detailed as recorder of board for completion of examination of applicants for entrance to the service, vice Joseph Goldberger, relieved

Olsen L T asst surgeon granted leave of absence for 7 days from July 26 1907 under Paragraph 191, Service Regulations

Olsen E T asst surgeon granted extension leave of absence for 7 days from Aug 2, 1907

Stiles Ch W chief Division of Zoology, Hygienic Laboratory detailed to represent the service at the Seventh International Zoological Congress, to be held in Boston Aug 19 23 1907

Brinckerhoff, W R director Leprosy Investigation Station Hawaii detailed to represent the service at the Sixth International Dermatological Congress in New York Sept 9 14 1907

Spohn, A. E acting asst surgeon granted leave of absence for 30 days, from July 1 1907, and excused for a further period of two months from the expiration thereof without pay

Townsend F, acting asst surgeon, granted 7 days leave of absence, from July 29, 1907

Townsend W, acting asst surgeon, granted extension leave of absence for 7 days

BOARD CONVENED

A board of medical officers was convened to meet at Chicago for the purpose of making a physical examination of an inspector of immigrants Detail for the board Surgeon G B Young chairman Acting Asst Surgeon William Kimmet Acting Asst Surgeon J J Gerkin recorder July 25, 1907

Health Reports

The following cases of smallpox, yellow fever cholera and plague have been reported to the Surgeon General Public Health and Marine-Hospital Service, during the week ended Aug 2 1907

SMALLPOX—UNITED STATES

California San Francisco, July 13 20, 4 cases
Illinois Peoria, June 15 July 20, 10 cases
Kentucky Louisville, July 18-25, 2 cases.
Missouri St Joseph, July 13-20, 3 cases
Ohio Hamilton, March 31-June 15, 21 cases Toledo, June 29 July 29 6 cases.
Pennsylvania Homestead July 14-21 1 case
Texas Houston April 28 July 27, 50 cases, 1 death
Virginia Richmond, July 13 20 1 case
Wisconsin Milwaukee, July 13 20, 2 cases

SMALLPOX—INSULAR.

Philippine Islands Manila, June 8-15, 2 cases

SMALLPOX—FOREIGN

Algeria Algiers June 1 30, 8 deaths
Australia Newcastle May 1 31 1 case
Austria Trieste, June 8-15 1 case, 1 death
Brazil Para July 6-20 11 cases 6 deaths
Canada Halifax, July 20 27, 1 case
Chile Iquique June 30 present.
China Amoy June 22 present Foochow June 23 30 1 case Hankau June 22-27, 1 case, 1 death Hongkong, June 1-15 6 cases 5 deaths Shanghai June 23 30 10 deaths (among natives), Tientsin June 30, present.
Formosa June 15-22, 1 case
Germany Königsberg, June 30 July 6 1 case
India Bombay, June 18-25, 2 deaths, Calcutta, June 8-15 20 deaths, Rangoon June 8-15 1 death
Italy General July 4 11 24 cases Turin June 30-July 7 1 case 1 death Venice, June 29-July 6 1 death
Japan Yokohama June 17-24 1 case
Korea Seoul June 30 present.
Madeira Funchal, July 7 14 45 cases 6 deaths
Manchuria Dalny June 15-29 4 cases 1 death
Mexico Aguas Calientes, July 13 20 7 deaths, City of Mexico, June 22 July 6, 18 deaths Monterey July 7 14, 1 death
Portugal Lisbon June 29 July 13 13 cases
Russia Moscow June 15-29, 13 cases 2 deaths Odessa June 29-July 6 2 cases 1 death Riga, June 29 July 6, 1 case, St. Petersburg June 22 29, 2 cases, 2 deaths
Spain Almeira June 1 30 8 deaths, Barcelona July 1 10 3 deaths Cadiz, June 1-30 5 deaths Seville, June 1 30, 10 deaths Valencia, June 30-July 7 16 cases 1 death
Turkey Bagdad, June 8-22 present.

YELLOW FEVER

Brazil Para, July 6-20, 8 cases, 6 deaths

CHOLERA.

India Bombay June 18 25 1 death Calcutta June 8-15 37 deaths, Rangoon, June 8 15, 2 deaths

PLAGUE

Africa King William's Town, June 8 15 1 case
Chile Antofagasta, June 30 9 cases 2 deaths
China Hongkong June 1 15 28 cases, 24 deaths
Egypt Alexandria, June 27 July 1 1 case, Assiout Province June 27-July 1 8 deaths Behara Province June 27 July 1, 5 cases 4 deaths Beni Souef Province June 27 July 1, 1 case 1 death Minieh Province, June 27 July 1, 1 case
India Bombay June 18-25 16 deaths, Calcutta, June 8-15, 62 deaths, Rangoon June 8-15 68 deaths
Japan Formosa (Island) June 15 22, 124 cases 111 deaths Tokyo July 6 2 cases 1 death Yokohama, July 6, 2 cases in suburbs.
Mauritius Port Louis April 1 30 3 cases 3 deaths
Peru Callao June 13 1 case Chiclayo June 13 1 case 1 death Mollendo June 13 1 case 1 death Paita June 13, 1 case Trujillo vicinity of June 13 present

Association News

Davis Memorial Fund

Dr Henry O Marcy, chairman of this fund, asks that the following list of contributors be published as the contribution from Massachusetts

Massachusetts Med Society	$300	Dr Robert W Lovett	$ 5
Dr Henry O Marcy	100	Dr George B Shattuck	5
Dr Herbert L Burrell	25	Dr Theobald Smith	5
Dr James B Ayer	10	Dr John E Somers	5
Dr Clarence J Blake	10	Dr A O Squier	5
Dr Richard C Cabot	10	Dr William D Swan	2
Dr Thomas E Cunningham	10	Dr George W Gay	1
Dr Reginald W Fitz	10	Dr E G Cutler	5
Dr Joel E Goldthwait	10	Dr A P Clarke	5
Dr Francis B Harrington	10	Dr A T Cabot	5
Dr James J Putnam	10	Dr John C Munro	10
Dr Maurice H Richardson	10	Dr George H Monks	10
Dr Frederick C Shattuck	10	Dr Morton Prince	5
Dr Edmund H Stevens	10		
Dr John Collins Warren	10		
Dr John A Gordon	5	Total	$618

NEW MEMBERS

List of new members of the American Medical Association for the month of July, 1907

ALABAMA

Dunster, W R, Florence
Elkourie H A Birmingham
Gibbs E T Birmingham
Stansberry, C L, Bessemer

ARKANSAS

Duckworth G M, Pine Bluff
Hall, B A, Pine Bluff
Haltom W C Jonesboro
Kirby H H, Harrison
Knott A D Gravette
Murphy, F T Brinkley
Williams, H E, Pine Bluff

CALIFORNIA.

Earing, E W, San Francisco
Herzog, G K San Francisco
Parks J A, San Diego
Phillips W A, Santa Cruz
Tuckerman, W C, Kennett

COLORADO

Aberg Axel Idaho Springs
Crook W W Glenwood Springs
Fowler, C C Denver
Jones S F, Denver
Kent, W C, Denver
Matlock, J A, Longmont
Parker O T, Salida
Trueblood Chas, Monte Vista
Wescott, O D, Denver

CONNECTICUT

Baines, F H Stamford
Davenport, Annabella K Hartford
Willard, F B, Hartford

DISTRICT OF COLUMBIA

Parker H P Washington
Perkins, W R, Washington

FLORIDA

Cunningham, L W Jacksonville
Warren, W R Key West

GEORGIA

Bailey, T S Newnan
Barge, J L, Newnan
Carlton, W A Athens

ILLINOIS

Baines, E M Chicago Hgts
Bartlett, J D, Chicago
Blender Wm, Carthage
Floyd, T W Peoria
Fortune H C, Literberry
Geiger, L H Gilman
Irish H E, Chicago
Johnson, A C Newark
Lawler T A, Taylorville
Little R M, E St Louis
Loeb L M Chicago
Lofgren Emil, Rockford
Miller I M, Chicago
Montgomery C C Lincoln
Nelms C O Herscher
Schmidt C H, Chicago
Speed Kellogg Chicago
Stanley, O O Urbana
Titterington, M B Jerseyville

INDIANA

Caffee A H Terre Haute
Combs, A H, Indianapolis
Field W H Evansville
Frazer Chas, Muncie
Hollingsworth M P Princeton
Shonkwiler, Jos Rockville
Thompson, H J, La Porte

INDIAN TERRITORY

Hawley S De Zell, Tulsa
Holland J L, Madill
Hottle W C, Paoli

IOWA

Kyle W S Diagonal
Lowry N J, Ely
McWilliam, C, Ames
Osborn W S, Knoxville
Winsett, C V Princeton

KANSAS

Beckner E D Hoxie
Bostwick, W H Cedar
Boswell J H Baxter Springs
Clark F P, Kansas City
Hammel, S A, Topeka
Jacquith, J H Council Grove
Rogers, A H, Altoona
Smith D M Argentine
Warner, T W, Parker

KENTUCKY

Bateman, C H Bradfordsville
Burnett, E D, Louisville
Crume S M Fox Creek
Green Winnifred Louisville
Hanes G S, Louisville
Kieffer F J Louisville
Kremer J W Louisville
McKinley I H Winchester
Morton D C Louisville
Oblinger F V Catlettsburg
Simon, W F, Louisville

LOUISIANA

Blocl W H, New Orleans
Faulk R W Monroe
Mohler D A Shreveport
Norwood T S Torras
Rector J M Collinston
Watkins T H Lake Charles

MARYLAND

Hemmeter G W Baltimore
Steuart, C C, Baltimore
Stiefel J G Baltimore
Stoncipher Claude Baltimore

MASSACHUSETTS

Ascher, Joseph Boston
Barnes F J Cambridge
Bushold F G Lawrence
Cyr E E Lawrence
Gage F L, No Chelmsford
Goldthwaite R H Worcester
Hartwell H F Boston
Holtt C L Lynn
Jackson J P Fall River
Packard Horace Boston
Park F E Stoneham
Phillips W F Boston
Reed V A Lawrence
Shohan Jos, Boston
Smith T D Boston
Sullivan C B Hathorne
Thayer Eugene Boston
Walch, J F Lawrence

MICHIGAN

Brady E J Kalamazoo
Burgess C G Detroit
Cole H S South Range
Gregory M S Travers City
Huntley F M Manton
McIntyre C S, Woodland
Robinson A L Allegan
Roth Paul Battle Creek

MINNESOTA

Bergroth E Duluth
Carson J H Duluth
Chapple C L Rochester
Eustis W C Owatonna
Fleming, A S, Wheaton
Freligh, E O B Stillwater
Heverdale, O C Rochester
Hielscher, J A Mankato
Jones A W Red Wing
Linton, Laura A Rochester
Mathisen, G B, Evansville
McKeon, Owen, St Paul
Nicholson, Jos Brainerd
Ogden, B H, St Paul
Pratt W H, Stillwater
Tilderquist D L, Duluth
Warren, F S, Faribault
Wedge A C Albert Lea
Wellner, G C, Red Wing
Wilson, W F Lake City
Wylie, A K T, Faribault

MISSISSIPPI

Alexander A P Sledge
Arnold W H, Eupora
Berryhill, W A Eupora
Finch, L W, Eupora
Glass H D Lambert
Halbert F M Greenville
Small H J Winona
Wasson, U S Moorhead

MISSOURI

Baird, J P Marionville
Berry, G F Kansas City
Bogart, T N Excelsior Springs
Briggs, Waldo St Louis
Campbell, A V St Louis
Cape L W, Maplewood
Clausen J J, Kansas City
Finley, F L Anniston
Godfrey G B St Louis
Graul R E, St. Louis
Grindan Joseph St Louis
Gwinn G E, Bethany
Holley A E St Joseph
Johnson G L, Kennett
Klinefelter, M L St Louis
Kuhlmann F C E St Louis
Luten J B Caruthersville
McKim H W, Labelle
Munson C L St Louis
Myerdick A H St Louis
North W R, Labaddie
Ogilvie, F L, Blodgett
Owens N O, Lagrange
Patton, C W Sampsell
Richey L A Fairport
Robinson, A C, St Louis
Wallace J S, Brunswick

MONTANA

Brice J T Lewistown

NEBRASKA

Burchard C T, Falls City
Fritschel, G C, So Auburn
Nielsen, Morris Belden

NEW JERSEY

Barbash, Samuel Atlantic City
Burnett, H J, Montclair
Carroll A J, Morris Plains
Dyer Florence A, Riverton
Freeland Frank Maywood
Koch, G J Paterson
Levy Julius Newark
Stahl Alfred Newark
Telmer, Theodore Newark
Taylor W A, Trenton

NEW MEXICO

Field W C, Las Cruces
Frush H L, Watrous

NEW YORK

Agostini, V D New York
Barnes E A, Plattsburgh
Baker J L Brooklyn
Bellows L W Waterloo
Bookman Arthur, New York
Brown, Ethel D New York
Brown J R Seward
Bugbee, H G, Poughkeepsie
Bumster P H Long Island City
Byrne J H New York.
Coopernail G P Bedford
Coughlin J H F Troy
Doty G E New York
Ernst P H New York
Ferguson J Bruce New York
Foskett, Eben New York
Fowler P Van B, New York
Frederickson Victor New York
Ginnasi Francis New York
Goodman, Charles New York
Hare G R New York
Hawkins, N L Watertown
Higgins J J New York
Hoke F C, New York
Hunt E L, New York
Knight, C A Peekskill
Lee B J, New York
Lipset L J New York
Lloyd H W New York
Lotz G C, New York
Mabbott J M New York
Meacham Leslie New York
Meyers R E, Tottenville L I
Miller I M Utica
Morrill J L, New York
Mowry, E C New York
Nicoll M Jr, New York
Osgood Chas New York
Oyler W H, New York
Pamenter L A Corinth
Phillips B G New York
Pierce Eudora Brooklyn
Plummer, H E New York
Preston H I Utica
Pryor J H Buffalo
Quinlan T F New York
Robinson R W Auburn
Schott Max New York
Slote S H Brooklyn
Stapleton F A Johnstown
Stark M M New York
Thomson J J, New York
Tedford R H, Jr Albany
Torek, Franz New York
Wallace Charlton New York
Weinstein, Harris New York

NORTH CAROLINA

Carr J R, Durham
Jordan W S, Fayetteville
Rodman J C, Washington
Stevens R S Raleigh

NORTH DAKOTA

McNamara C J Barlow

OHIO

Bird C W Continental
Darby J C Cleveland
Ellsworth, W O, Austinburg
Evans J B K McGuffey
Gabriel S S, Lockington
Harris H L, Columbus
Howell C A Columbus
May F S Cincinnati
Marine David, Cleveland
Phillips John Cleveland
Pirrung J F, Cincinnati
Shepard C J Columbus
Sidle, C D Convoy

OKLAHOMA

Baker, R C, Granite
Dall A W Cement
Roberson, J F Duncan
Sloan I N Kingfisher
Stiles N Medford
Walker J D, Caney
Wolff, L G, Okarche

PENNSYLVANIA

Boyd, J M Walnut Bottom
Campbell M D Plumville
Condon W J Susquehanna
Cope T A, Philadelphia
Hannan C E Johnstown
McGinty E F Pittston
McKee J H Philadelphia
Scott W McC Black Lick
Settle G M Norristown
Shammo G C, Philadelphia
Wilson A R Monessen
Wright W F Harrisburg

SOUTH CAROLINA

Rosser H F, Westminster

SOUTH DAKOTA

Baldwin, F M Ashton

TENNESSEE

Sanders, E M Nashville

TEXAS

Adair, C C Bailey
Angier E L Huntsville
Aycock R F, Rosebud
Brown W E, Merkel
Copenhaver J E, Aubrey
Copeland H V Grand Prairie
Crook W J, Cooper
Davis W H Arlington
Dunn, J F Burleson
Fargle H C Lingleville
Farthman, H W Conroe
Freeman Wm Pottsboro
Givens J M Fort Worth
Gordon L C Brownwood
Halliburton B S Devine
Harlan W J Bartlett
Hayes M A, Lott
Hindman E C Howland
Horney, H Van Alstyne
Horton R W Ottine
Jones A F Colorado
Jones G M Taylor
Kimble E W Gorman
Kimmins R L, Iredell
King F B Houston
Maynard G P Cullioka
McKissick J F Arlington
McMickin Dru, Kirbyville
McNeill, W T, Valley Mills
Milton Solon Ft Worth
Morgan T B, Bronson
Mullins W C Fort Worth
Mulloy J J, Dublin
Orr Charles Comanche

Layne J F Grand Prairie
Powell R G Baird
Puckett, Ezra Henrietta
Rhoads H H Vernon
Ricks G N, Pleasanton
Rice S P, Martin
Rushing F E Mineral Wells
Rutledge W C Denison
Shepard O H Morgan Mill
Smith, S W, Denison
Throckmorton B E McKinney
Townes J M Naples
Weaver T P, De Leon
Wiley T W McKinney
Williamson C D Sacul
Wynn T F Denison

VIRGINIA

Cooke R P Riverton
Harnsberger Stephen Catlett
Kagey T J Newport News
Leake L K East Leake
McCue F C Charlottesville
Miller, R W Barton Heights
Powell Llewellyn Alexandria
Rawls J L Norfolk
Renn G A Norfolk
Shipp J B Norfolk
Winn, J F, Richmond

WEST VIRGINIA.

Arnold J R, Hurricane
McCarty J L Berwind
MacQueen G A Charleston
Spangler C W Jared
Koller R D Jr Wittenberg
Stewart W De Witt Moundsville

WISCONSIN

Carey, C H, Merrill
Daly J P, Reedsburg
Epley F W New Richmond
Fox J A., Beloit.
Garner C E, Linden
Giesen C W Superior
Henke W A Tomah
Howison A L Menomonie
Jones D T Wausau
Koch A J Wausau

Medical Education and State Boards of Registration

North Dakota Adopts Higher Requirements—At a recent meeting of the State Board of Medical Examiners of North Dakota it was voted that graduates of 1910 and thereafter to secure license to practice medicine and surgery in North Dakota must have had preliminary education equal to the standard adopted by the University of North Dakota to wit In addition to a high school diploma two years' work in a college of liberal arts, having a standard equal to that of the University of North Dakota

Reciprocity in North Dakota—Reciprocity on the basis of an examination has been established by North Dakota with Illinois, Iowa Maine Michigan, Vermont, West Virginia, Wisconsin and Wyoming

California Board Wins Case—In the case before the Supreme Court recently of James T Arwine vs the Board of Medical Examiners of the State of California wherein the plaintiff asked for a writ of mandamus compelling the board to recognize his medical diploma issued by the Medical Department of the University of the South, Sewanee Tenn the court refused the writ thus reversing the decision of the Appellate Court This decision was rendered in the absence of proof that the requirements of the Medical Department of the University of the South were in no particular less than those prescribed by the Association of American Medical Colleges for the year diploma was granted

The Carnegie Foundation—The first annual report of the Carnegie Foundation for the Advancement of Teaching is at hand and gives some interesting information as to the action of the institution in providing pensions for retiring teachers Fifty two institutions have been placed on the accepted list, of these Massachusetts has 11, New York 11, Pennsylvania, 4, Ohio 4 Wisconsin 3, Connecticut, 2 New Jersey 2, Vermont, 2, California 1 Colorado, 1 District of Columbia 1 Illinois 1, Indiana 1 Iowa 1, Louisiana, 1 Maryland 1, Minnesota 1 Missouri 1 and New Hampshire 1 Two of the recognized colleges are in Canada It is interesting to note that no other state west of New England has more than one except Wisconsin which is accredited with 3 and that there is only one college recognized in the far South The 52 institutions contain in their faculties 257 persons eligible to retirement with pensions, of whom 46 accepted retiring allowances The age for retirement is fixed by the institution to which the professor belongs but there seems to be a tendency to fix a definite age probably 65 at which the teacher is expected to retire and after which he shall be kept in active service only by special vote of the trustees of the institution

Probably the most valuable service rendered by the foundation is the educational standard fixed for determining the eligibility of an institution to receive the benefits of the institution and which tends to determine in an authoritative manner the rank of American institutions claiming the title of college or university The educational standard adopted by the foundation is as follows "An institution to be ranked as a college must have at least six professors giving their entire time to college and university work, a course of four full years in liberal arts and sciences and should require for admission not less than the usual four years of academic or high school preparation or its equivalent in addition to the pre academic or grammar school studies A technical school, to be eligible, must have entrance and graduation requirements equivalent to those of the college and must offer courses in pure and applied science of equivalent grade To be ranked as a college, an institution must have a productive endowment of not less than two hundred thousand dollars"

That portion of the standard relating to preliminary education will be an added influence toward the establishment of four year high schools, which are much needed in a number of states

Texas April Report.—Dr T T Jackson, secretary of the Board of Medical Examiners for the State of Texas, reports the written examination held at Austin, April 30 May 2, 1907 The number of subjects examined in was 12, total number of questions asked, 150, percentage required to pass, 75 The total number of candidates examined was 116, of whom 83 passed, including 3 non graduates, and 33 failed, including 24 non graduates The following colleges were represented

PASSED

College		Year Grad	Per Cent
George Washington University		(1906)	84
Columbia University, Washington		(1899)	81 8
Rush Medical College		(1907)	80 2
Jenner Medical College	(1902) 75 5,	(1906)	80 5
Northwestern Univ Med School	(1896) 78 8	(1898)	80 5
Indiana Medical College		(1907)	82 6
University of Iowa		(1902)	83 1
University of Louisville		(1906)	77 5
Kentucky School of Med	(1898) 82 3	(1906)	77
Louisville Medical College		(1905)	75
University of Michigan	(1898) 81 2	(1906)	89 5
St Louis Coll of P and S	(1906) 75 8,	(1907)	75
Missouri Medical College		(1899)	75
Barnes Medical College		(1899)	75
University Medical College Kansas City	(1899) 78 8, (1906) 79 3 (1907) 78 9		
Washington University St Louis		(1906)	84 5
University of Buffalo		(1892)	76 2
Ohio Medical University		(1904)	75 3
Western Reserve University		(1901)	86 1
Southwestern University Med Coll Dallas	(1907) 75 7, 77 2 79 7 78 9 79 5 80 4 80 8 93 7		
Ft Worth University,	(1906) 82 7 (1907) 75 75 3 76 7 77 9 80 80 4, 80 7		
University of Texas	(1906) 75	(1907)	81 4 84 9
Baylor University,	(1904) 83 2 (1907) 75, 75 75 75 7 83 83 2 87 4		
University of Nashville	(1902) 77 2 (1904) 80, (1907) 76 77 2		
Memphis Hospital Med Coll	(1905) 78 3, (1906) 76 3, (1907) 75 4 76 2 78 79 3 79 4 78 8 85 3		
Tulane University of Louisiana	(1906) 81 7, 76, (1907) 75 7, 77 1, 79 9 81 4 83 7		
Meharry Medical College		(1907)	76 6 78 2
Vanderbilt University	(1881) 79 1, (1905) 84 3	(1906)	81 8
University of the South		(1906)	85
University of Tennessee		(1905)	75

FAILED

College	Year Grad	Per Cent
Harvey Medical College	(1899)	60 4
Eclectic Med Univ Kansas City	(1900)	41 4
Kansas City Med College	(1903)	52
Missouri Medical College		*58
Gate City Medical College	(1907)	67 5
Ft. Worth University	(1907)	68 5
Baylor University	(1907)	61 6
Meharry Medical College	(1907)	66 9 71

*Year of graduation not given

The following questions were asked

ANATOMY

1 Describe the inferior maxillary bone 2 Describe the internal abdominal ring 3 Name the openings through which the cranial nerves pass from the cranial cavity 4 Describe the relations of the femoral artery and name its branches 5 Describe the duodenum 6 What is the difference between the dura mater and the pia mater? 7 Describe the cross section of the spinal cord in the cervical region. 8 What nerve supplies the extensor muscles of the fore arm? 9 Which ribs mark the lower border of the lungs in the axillary region and dorsal region? 10 Describe the gross anatomy of the kidney 11 Outline the external jugular vein 12 Describe the tonsils Answer any ten questions

HISTOLOGY

1 Give the minute anatomy of the arachnoid membrane 2 Describe the pia mater 3 Describe the neurilemma. 4 Of what structure is nerve tissue composed? 5 Describe the conjunctiva histologically 6 In brief mention the structures of the iris 7 What structure gives color to the eyes as when we speak of blue eyes grey eyes, "black eyes etc? 8 Divested of its covering what tissues compose the tongue? 9 Give minute structure of the esophagus 10 What is the structure of the true vocal cords? 11 What is the structural difference between skin on the palm of the hand and that on the dorsal surface? 12 Give the minute anatomy of a secreting gland Answer any ten questions

PHYSIOLOGY

1 Name the varieties of connective tissue 2 What are the manifestations of cell life? 3 What is the function of the nervous system? 4 Describe the structure of nerve trunks. 5 Give the physiologic properties of muscle 6 Describe the digestive apparatus 7 Describe intestinal digestion 8 How do the products of digestion find their way to the venous blood? 9 State the physical and chemical properties of the blood 10 Describe the physiologic anatomy of the heart 11 What physiologic process takes place in the capillaries? 12 What are the various functions of the liver? Answer any ten questions

CHEMISTRY

1 How is chlorin prepared? 2 What is understood by the term chemical formula? 3 Complete the following $CaCO_3 + 2HCl =$ 4 What is the difference between quick lime and slacked lime 5 What is the test for lead in drinking water? 6 Mention the chemical and physical properties of phosphorus 7 Give two tests for sugar in the urine 8 Give two tests for albumin in the urine 9 What is the antidote for carbolic acid? 10 Mention three chief adulterants added to milk for its preservation 11 What is a radicle? 12 Give atomic weight and valence of Hg, Pb, Ag and O Answer any ten questions

PATHOLOGY

1 How does the morbidity of smallpox differ from that of measles? 2 Mention some lesions peculiar to scarlet fever 3 What apparent differences in throat lesions in diphtheria and follicular tonsilitis? 4 Mention some pathologic lesions that are sometimes the sequelæ of diphtheria 5 What constitutes the difference between laryngeal or true croup, and spasmodic croup? 6 Mention the usual pathologic progression in pulmonary tuberculosis 7 What pathologic condition in the lung corresponds to tubular respiration? 8 Grossly speaking, what morbid conditions in the lung would you expect to find when large moist râles are heard on auscultation? 9 Mention difference between embolism and thrombus 10 What would be the probable result of embolism in the brain? 11 How may you distinguish the morbid condition in cerebral hemorrhage from embolism in the brain by the symptoms? 12 What are the most common causes of dropsical effusions into abdominal cavity? Answer any ten questions

MATERIA MEDICA AND THERAPEUTICS

1 What class of acids would you give (internally) to acidify alkaline urine? 2 What is the dose of carbolic acid for internal administration? What are the chemical antidotes for carbolic acid? 3 Mention the antagonists of cocain 4 How do salines produce catharsis? 5 What is the proportion of mercury in hydrargyrum cum creta, what is the dose? 6 Give the chemical name and dose of (a) epsom salt (b) rochelle salt, (c) glauber salt, (d) cream of tartar 7 What is the physiologic effect of cocain on (a) the ocular conjunctiva, (b) the pupil of the eye (c) and the salivary glands? 8 What is the adult dose of (a) hyoscin hydrobromate, (b) apomorphia, (c) morphia sulphate (d) pilocarpin? 9 On what chemical change in the intestinal tract does the purgative action of castor oil depend? 10 What effect has pilocarpus on the heart, on the skin and on the salivary glands? 11 Name the ingredients of (a) Fowler s solution, (b) Donovan s solution, (c) Mensell's solution 12 Name two local and two systemic emetics and give the dose of each 13 How do strophanthus and digitalis differ in their physiologic action, name the dose of the tincture of each according to the new pharmacopeia 14 What is the effect of adrenal extract on (a) the heart, (b) the arterioles? 15 Name a drug which causes dilatation of the pupil of the eye when taken internally and one when applied locally Name a drug which causes contraction of the pupil of the eye when taken internally and one when applied locally 16 Give the composition and state the dose of Dover's powder 17 State the composition and dose of pulvis jalapæ compositus 18 How should poisoning by coal gas—illuminating gas—(carbonic oxid) be treated? Answer any fifteen questions

MEDICAL JURISPRUDENCE

1 What do you understand by civil malpractice and criminal malpractice? 2 What is the value of a dying declaration in court and what should be observed by the physician at the time same is given? 3 What do you understand by a coroner's inquest? 4 How would you determine whether a person found dead had committed suicide or was murdered? 5 From a medicolegal standpoint what would you do if called to see a patient before death who was suspected to have been poisoned? 6 If called to view the body of an infant, how would you determine whether it was born dead or had lived after its birth? 7 Mention a few symptoms that would lead you to suspect sanity in a criminal 8 Give some general rules to be observed in giving expert testimony 9 What do you understand by the term "medical expert witness" 10 What do you undertsand by personal identity? 11 If called to view the remains of a person at the place found dead relate briefly what you would do 12 Give very briefly how you would hold a postmortem on a person found dead Answer any ten questions

HYGIENE.

1 Name two diseases communicated to man solely by the mosquito and name the mosquito responsible for each disease? 2 What is the minimum number of cubic feet of air space that should be allowed to each patient in a hospital? 3 How would you instruct a family to fumigate a room after continuous use by a tuberculosis patient for some time? 4 What steps should be taken by the state authorities to prevent the spread of tuberculosis throughout the state? 5 What steps should be taken by the proprietors of hotels and boarding houses located in health resorts to prevent communication of tuberculosis to uninfected guests? 6 In what way is typhoid fever most frequently communicated from one person to another? 7 How would you prevent the spread of yellow fever? 8 Give your method of handling a diphtheria case in a family of children? 9 Name some of the organic and inorganic matters which may render drinking water unwholesome? 10 If consulted relative to the management of a school what instructions would you give relative to age for children to enter hours of study and exercise? 11 Referring to question next above what instructions would you give relative to light heat and ventilation? 12 In an epidemic of scarlet fever what requirements would you adopt before permitting infected children to return to school? Explain in detail Answer any ten questions

PRACTICING MEDICINE.

1 What is stomatitis? Name the various forms and outline the treatment 2 Give cause symptoms and treatment of uremia 3 Give the different types of malarial fever and treatment appropriate to each 4 Give the causes and diagnosis of gastric hemorrhage and treatment 5 Describe the different valvular diseases of the heart and treatment 6 Give the causes and treatment of incontinence of urine in children 7 What is cholera infantum? Give cause and treatment 8 What conditions produce edema? 9 Mention the early signs of phthisis pulmonalis 10 Outline treatment of acute nephritis 11 Name the different forms of dysentery 12 What is ophthalmia neonatorum Give cause and treatment Answer any ten questions

SURGERY

1 What is the diagnosis and treatment of empyema? 2 How would you treat osteomyelitis of the tibia? 3 What are the characteristics of the initial lesion of syphilis? 4 What do you regard as the best antiseptic solution for general external use? 5 Describe how you would cut your flaps for amputation of forearm 6 What tumors are most commonly found in the female breast? 7 How would you treat an extensive burn of the first and second degree on the body? 8 What are the symptoms of strangulated inguinal hernia? 9 What measures would you use to combat surgical shock? 10 What permanent dressing would you apply to a simple fracture of the leg at the junction of the lower and middle thirds? 11 What are the best local anesthetics, and in what strength and how would you apply them? 12 What dressing would you apply to a sprained ankle? Answer any ten questions

EYE, EAR, NOSE AND THROAT

1 How would you treat ophthalmia neonatorum? 2 What is the treatment of iritis? 3 What are the post nasal adenoids and what the treatment? 4 What are the symptoms of pus in the antrum? 5 What are some of the most important results of middle ear disease? 6 What are the important sequelæ of diphtheria? Answer any five questions

OBSTETRICS

1 What influence does pregnancy have on a tuberculous woman? 2 What changes occur in the nervous system during pregnancy and what are the symptoms? 3 Give the diagnosis of a fetus dead in utero and the treatment of such condition 4 Describe the present aseptic method of the conduct of labor, including delivery of after birth 5 Give the diagnosis, dangers and treatment of retained placenta and membranes 6 What means are used to prevent puerperal infection in private practice? 7 Through what channels are septic germs liable to penetrate, and what conditions of the tissues facilitate their entrance? 8 (a) State what varieties of mental disease occur in the so called puerperal insanity, (b), give causes and symptoms, (c), give the prognosis treatment 9 What are the chief points of medicolegal interests in puerperal insanity? 10 Give the definition, causes premonitory symptoms and treatment of eclampsia 11 (a) What are the indications for the induction of premature labor? (b) Describe the operation 12 Give the etiology, symptoms and treatment of cystitis in the puerperal state. Answer any ten questions

GYNECOLOGY

1 What do you mean by the terms amenorrhea and dysmenorrhea and give treatment in each case? 2 Give the pathology, symptoms and treatment of acute endometritis 3 Describe the anatomy and uses of round ligaments 4 Describe in detail your treatment of extreme retroversion of the uterus 5 Under what conditions would you operate for carcinoma of the cervix uteri? 6 Give the symptoms and treatment for pelvic abscess 7 What are the causes of pelvic abscess? 8 What dangers arise from delayed appropriate treatment of pelvic abscess? 9 Give in detail steps of a good operation for repair of the perineum? 10 What tissues are torn in complete laceration of the perineum extending two inches up the rectum? 11 What are the objections to tapping an ovarian cyst? 12 What complications may arise from gonorrhea in the female? Answer any ten questions

Florida May Report.—Dr J D Fernandez, secretary of the Florida Board of Medical Examiners, reports the written examination held at Jacksonville, May 15 16, 1907 The number of subjects examined in was 7, total number of questions asked, 70, percentage required to pass, 75 The total number of candidates examined was 41, of whom 39 passed and 2 failed The following colleges were represented

PASSED

College.	Year Grad	Per Cent
University of Arkansas	(1905)	86
Atlanta Coll of P & S (1906) 91 4 (1907) 78 2, 79, 85, 89 2, 98		
Atlanta School of Medicine	(1907)	83 4
Northwestern University	(1905)	94 8
College of P and S Chicago	(1902)	95 1
Howard University, Washington	(1894)	77 8
Hospital Coll of Med, Louisville	(1902)	84 5
Barnes Med Coll, St Louis	(1895)	92 5
University of Missouri	(1904)	84 4
College of P and S, New York (1874) 90 4	(1888)	86
Cornell University	(1903)	80
Miami Medical College	(1906	87 7
Medical College of Ohio (1897) 97	(1902)	89 5
University of Pennsylvania	(1903)	95 4
Eclectic Med Institute Cincinnati	(1907)	90
Leonard Medical School	(1907)	79 1, 82 7
University of the South	(1906)	85 1, 94 7
Memphis Hospital Med Coll	(1902)	81 7
Meharry Med Coll, (1905) 75, (1907) 75 82 7 83 7 85 4, 84 7, 87 5		
Chattanooga Medical College	(1907)	88, 90
Medical Coll of South Carolina	(1901)	88 1
University of Vermont	(1904)	88 7
University of Havana, Cuba	(1891)	86 5

FAILED

College.	Year Grad	Per Cent
*Atlanta Medical College	(1894)	50 4
University of Tennessee	(1899)	70

*This school united with Southern Medical College in 1898 to form Atlanta College of Physicians and Surgeons

Iowa May and June Reports—Dr Louis A Thomas, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Keokuk, Iowa City and Des Moines, May 7 9, June 5 7, and June 11-13, 1907, respectively The number of subjects examined in was 20, total number of questions asked, 100, percentage required to pass, 75

At the examination held at Keokuk May 7-9, the total number of candidates was 31, of whom 28 passed and 3 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
Keokuk Med Coll College of P and S (1906) 76 (1907) the grade of 75 was reached by three 77 by one 78 by two 79 and 80 by one each 81 by two 82 by four 83 and 84 by one each 85 86 and 87 by two each 88 and 89 by one each 90 by two and 94 by one.		

FAILED

College	Year Grad	Per Cent
Keokuk Med Coll College of P and S	(1904) 66 (1907) 50	74

At the examination held at Iowa City, June 5 7, the total number of candidates examined was 54 of whom 53 passed and one failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
University of Iowa (1907) the grade of 75 was reached by two 76 by one 77 by two 78 by five 79 by two 80 by three 81 by five 82 by four 83 by six, 84 by two 85 by five 86 by seven 87 by one 88 by four and 89 by one		
University of Iowa Homeo Dept.	(1907)	80 82 83

FAILED

College	Year Grad	Per Cent
University of Iowa	(1907)	74

At the examination held at Des Moines June 11 12, the total number of candidates examined was 55, of whom 41 passed and 14 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
College of P and S Chicago	(1907)	78 81 86 86 89
Northwestern University	(1907)	76 78 87
Bennett Coll of Ecl Med and Surg	(1907)	85 89
Chicago Coll of Med. and Surg	(1907)	75 77
Drake University	(1907)	75 75 75 76 78 80 82 85 86 87 87 89 89 90
Sioux City Coll of Med.	(1907)	75 78 83
Ensworth Central Med. Coll	(1907)	76
Creighton Med. Coll	(1907)	76 77 78 79 81 83
New York Homeo Med. Coll	(1907)	78
Eclectic Med. Institute Cincinnati	(1907)	85
Hahnemann Med. Coll Philadelphia	(1907)	76
Jefferson Med College	(1907)	85
Queen s University Kingston Ontario	(1904)	86

FAILED

College	Year Grad	Per Cent
Northwestern University	(1907)	68 71
Drake University	(1907)	65
Sioux City Coll of Medicine	(1907)	71 73
St Louis Coll of P and S	(1907)	72
Ensworth Central Med Coll	(1907)	71
University Med Coll Kansas City	(1902)	71
Creighton Med Coll	(1906) 63 (1907)	58 65 71 70 74

Wisconsin April Reciprocity Report.—Dr J V Stevens secretary of the Wisconsin Board of Medical Examiners, sends us a report of those licensed through reciprocity at the meeting held April 9, 1907 Five candidates were registered under the exemption clause at this meeting The following colleges were represented

LICENSED THROUGH RECIPROCITY

College.	Year Grad	Reciprocity with
Hahnemann Med. Coll Chicago	(1900)	Iowa
Rush Med Coll	(1896) (1902) (1904)	Illinois
Northwestern University	(3 1906)	Illinois
Medical College of Indiana	(1904)	Indiana
Kentucky School of Medicine	(1898)	Illinois
Detroit College of Medicine	(1906)	Michigan
University of Minnesota	(1904)	Minnesota
Medical College of Ohio	(1905)	Ohio
Jefferson Medical College	(1881)	Michigan

REGISTERED UNDER EXEMPTION CLAUSE.

College	Year Grad
Rush Medical College	(1896)
Northwestern University	(1888)
Minneapolis College of P and S	(1890)
University of Toronto Ontario	(1892)
Royal University of Christiania Norway	(1892)

Wisconsin June Report.—Dr J V Stevens, secretary of the Wisconsin Board of Medical Examiners reports the written examination held at Milwaukee, June 18 20, 1907 The number of subjects examined in was 21, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined for license to practice medicine was 60 of whom 51 passed, 4 failed and 5 were conditioned Fifteen reciprocal licenses were granted and 4 candidates were registered under the exemption clause The following colleges were represented

PASSED

College	Year Grad.	Total Num Ex.
Denver and Gross Coll of Med	(1907)	1
College of P and S Chicago	(1 1906) (4 1907)	5
Rush Medical College	(1 1886) (1 1887)	2
Illinois Medical College	(1907)	1
Hahnemann Medical College	(1907)	1
Tufts College Med. School	(1904)	1
College of P and S New York	(1903)	1
Milwaukee Medical College	(1907)	21
Wisconsin Coll of P and S	(1 1906) (17 1907)	18

FAILED

College	Year Grad.	Total Num Ex.
Barnes Medical College	(1905)	1
Milwaukee Medical College	(1907)	1
Wisconsin College of P and S	(1907)	2

CONDITIONED

College	Year Grad.	Total Num Ex.
Rush Medical College	(1901)	1*
Illinois Medical College	(1906)	1†
Marion Sims Beaumont Medical College	(1894)	1†
Wisconsin College of P and S	(1907)	1†
Milwaukee Medical College	(1907)	1†

*Conditioned in practice †Conditioned in pathology

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Northwestern University	(1898) (1906)	Illinois
Coll of P and S Chicago	(1903) Illinois (1906)	Minnesota
Rush Medical College	(1900) (2 1906)	Illinois
Hahnemann Med. Coll Chicago	(2 1906)	Illinois
American Med Miss College	(1906)	Illinois
American Coll of Med and Surg Chicago	(1904)	Illinois
Illinois Medical College	(1906)	Illinois
Keokuk Medical College	(1901)	Iowa
University of Michigan	(1906)	Michigan
Trinity Medical College Ontario	(1895)	Michigan

REGISTERED UNDER EXEMPTION CLAUSE

College	Year Grad
Hahnemann Med Coll Chicago	(1887)
Rush Medical College	(1886)
College of P and S Milwaukee	(1907)
University of Freiburg Austria	(1889)

Rhode Island July Report.—Dr Gardner T Swarts, secretary of the Rhode Island State Board of Health reports the written examination held at Providence July 2 3 1907 The number of subjects examined in was 7, total number of questions asked, 70 percentage required to pass 75 The total number of candidates examined was 29, of whom 16 passed and 13 failed including 3 non graduates The following colleges were represented

PASSED

College	Year Grad	Per Cent
Baltimore Med Coll	(1907)	77 75 3
College of P and S Boston	(1907)	77
Tufts Coll Med School	(1907)	75 86 7
Harvard Med School	(1906) 80 6 (1907)	76 1
Cornell University	(1907)	82 2
College of P and S New York	(1907)	90 6
New York Homeo Med Coll	(1905)	77 9
University of Pennsylvania	(1902) 77 3 (1907)	78 3 88 9
Jefferson Med Coll	(1907)	88 8
Med Coll of South Carolina	(1905)	78 4
McGill University Quebec	(1902)	82 2

FAILED

College	Year Grad	Per Cent
Baltimore Med Coll	(1907)	50 8 60 9 66
Baltimore University	(1904) 52 8 (1907)	62 8
College of P and S Baltimore	(1907)	70 7
Maryland Med Coll	(1907)	64 8
Laval Univ Quebec	(1895) 61 4 (1904) 65 (1905)	51

Medicolegal

Points from Résumé and Construction of New York Legislation Relative to Privileged Communications—Taking of Deposition as Waiver of Privilege

The Court of Appeals of New York says in the personal injury case of Clifford vs Denver & Rio Grande Railroad Company that the Revised Statutes of that state formerly provided and the Code of Civil Procedure (section 834) now provides that a physician "shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity" The Revised Statutes, however, did not provide whether or when or how the patient could waive his right to object to the disclosure The first provision found relating to that subject appeared in the Code of Civil Procedure, as first enacted, which provided that the prohibition should "apply to every examination of a person as a witness, unless" it was "expressly waived" by the patient And the court goes on to show the way that legislation starting with no regulation on the subject of waiver in 1877 allowed an express waiver, in 1891 an express waiver "on the trial or examination," and since 1899 an express waiver "on the trial or examination" when made in open court, with no right to waive, by a paper executed prior to the trial, except by the stipulation of the attorneys for the respective parties The prohibition applies "to any examination of a person as a witness" unless it is waived as thus provided

Clearly the legislature did not mean that the patient could not waive the statute by calling the physician and examining him at the trial, or by not objecting if the other party called him The court thinks it was not intended in the absence of any specification to that effect, to prevent other acts from constituting a waiver when the necessary result thereof would take the case out of the spirit of the statute The object of section 834 was to prevent the disclosure of delicate and confidential matters, which might humiliate the patient in his lifetime and disgrace his memory when dead, so as to enable him to consult a physician in safety, knowing that his lips would be sealed by the law, until he himself removed the seal When, however, the patient forces the physician to tell all he knows on the subject, and thus publishes to the world all that he might have kept secret, he no longer needs the protection of the statute, and withdraws himself from the spirit of the prohibition That is the logical and necessary effect of such an act, and, if the legislature had intended to prevent that result, the court thinks it would have said so in specific terms

The special question in this case was whether the plaintiff's causing the deposition of a physician to be taken constituted a waiver under the statute as to the testimony so taken The court holds that it did The language of the section limiting waivers to such as are made in open court on the trial of an action or by the stipulation of the attorneys for the respective parties should be construed as to promote, not to defeat, the purpose of the statute While there is no doubt that the examination of a witness under a commission can not be regarded for all purposes as part of the trial, still the taking of testimony to be used as evidence by either party may well be regarded as a part thereof so far as it affects the question here before the court The application for a commission is made in open court to take evidence to prove or disprove the issue It is a proceeding authorized by law to compel a witness to give evidence to be used in deciding the case Although preliminary to the formal trial in point of time, in substance it may be held so much a part of the trial as to comply with the amendment of 1899, passed for the purpose, already pointed out, of preventing waivers by contract made long before the commencement of the action

Moreover, when the plaintiff in this case moved for a commission to examine a physician, her attorneys either signed a notice of motion or a stipulation for that purpose Interrogatories were prepared and signed by her attorneys, calling on the witness to disclose, in full, information which he had acquired while attending her in a professional capacity Cross interrogatories were prepared by the other party at some expense and annexed to the commission The court thinks that the attorneys for the respective parties thus stipulated a waiver of section 834 as permitted by section 836 for they signed papers in a legal proceeding taken in this action, which could have no practical effect unless they operated as a waiver Neither the form nor the contents of the stipulation is prescribed, and hence whatever shows a clear intention to surrender the protection of the statute is sufficient

Interrogatories asking the physician to tell what his examination of the plaintiff disclosed, to describe her injuries and the like, showed an unmistakable intention to make public all the information that he had acquired in attending her A voluntary disclosure of the privileged testimony is conclusive evidence of an intention to waive the privilege The questions could not be answered without making a full disclosure, and hence they necessarily showed that to have been the intention, which is the essence of a waiver

If the plaintiff could thus, through what may fairly be held to be the stipulation of her attorneys, force the physician to give evidence and could then object to such evidence being used in the only way authorized by law, she could mock the court and bring ridicule on its process with impunity The courts should not permit their remedies to be trifled with, nor at the election of one party, and to the injury of the other, turned into a vain and empty ceremony The necessary effect of signing the various papers for the commission, including the direct and cross interrogatories calling specifically for the precise information which the statute keeps secret unless waived, as the court thinks, constitutes a waiver of the prohibition by the stipulation of the attorneys for the respective parties

Sufficiency of Mental Capacity for Making Wills

The Supreme Court of Georgia says, in the case of Slaughter vs Heath, that various attempts have been made to establish some arbitrary test of testamentary capacity, but they have each had to be abandoned or modified as new combinations of facts arose in later cases At an early date the English courts entertained the view that it was not required that one should be mentally perfectly sound in order to make a will, and that a delusion not of a kind to affect the will would not render it invalid Then they seemed to incline to a narrower view Then they returned to their original position that testamentary capacity was not the same thing as perfect sanity

The American courts have generally held that perfect mental soundness did not furnish the test, but that there may be partial insanity, disconnected from and not affecting the making of the will, which would not render it invalid

What is needed is a sensible practical test, intelligible to a jury Rejecting any arbitrary tests, and looking at the mental capacity necessary in the light of the thing to be done, viz , the making of a will, the courts now have generally reached a fairly uniform definition of testamentary capacity, in the absence of special statutes It is thus stated in "Gardner on Wills," page 100, section 31 "A testator has a sound mind for testamentary purposes, only when he can understand and carry in mind, in a general way, the nature and situation of his property, and his relations to the persons around him, to those who naturally have some claim to his remembrance, and to those in whom and the things in which he has been chiefly interested He must understand the act which he is doing, and the relation in which he stands to the objects of his bounty and to those who ought to be in his mind on the occasion of making his will"

This court holds that a person has testamentary capacity who understands the nature of a testament or will, viz , that it is a disposition of property to take effect after death, and who is capable of remembering generally the property subject to disposition and the persons related to him by the ties of blood and of affection, and also of conceiving and expressing by words, written or spoken, or by signs, or by both, any intelligible scheme of disposition If the testator has sufficient intellect to enable him to have a decided and rational desire as to the disposition of his property, this will suffice

An inquisition of lunacy and a return that the person sought to be declared insane or an imbecile was not so, with an entry of the ordinary confirming such return, is not conclusive evidence against third persons who were not parties to the proceeding, although notified thereof as next of kin

Unnecessary Information Not Privileged.

The Supreme Court of New York, Appellate Division, Second Department, holds that in the personal injury case of Travis vs Haan the exclusion of the testimony of a physician of what the plaintiff told him of how the accident happened was reversible error That he was treating her professionally did not make the evidence inadmissible under section 834 of the New York Code of Civil Procedure on her objection The prohibition of that section only applies to information to physician "which was necessary to enable him to act in that capacity" She did not need to tell him that she carelessly got her hand into the machine to enable him to treat the injuries to it

Drainage from Typhoid Fever Place

The Supreme Court of Errors of Connecticut holds, in the case of Gorham vs City of New Haven, brought to recover damages for the pollution of a stream running across the plaintiff's dairy farm, that evidence that there were numerous cases of typhoid fever in a building, the drainage from which was conducted by the defendant to the beds for filtering the sewage that ran into the plaintiff's stream, was admissible in connection with evidence that the plaintiff's stream continued to be contaminated by the drainage after the use of the filter beds, as tending to prove both a diminished value of such use, even without further proof that the germs of such disease actually reached the plaintiff's stream, and although it appeared that the water of the plaintiff's stream was not then used for drinking purposes Under such circumstances the plaintiff could neither be expected to use such a stream for drinking purposes for his own cattle nor to be able to procure others to so use it

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York.

July 27

1 *Inoperable Sarcoma W B Coley, New York
2 Through Physiology to Pathology in Complications of Gall bladder Disease. G K Dickinson Jersey City
3 *Reinfection with Syphilis J Brew Nashville Tenn
4 *The Long Waisted Woman and Her Movable Kidney A E Callant New York
5 *Apomorphin in Acute Alcoholism C A Rosenwasser, Newark N J

1 **Inoperable Sarcoma Treated with Mixed Toxins**—Coley reports 42 cases of inoperable sarcoma, treated by himself, with the mixed toxins of erysipelas and *Bacillus prodigiosus*, with 26 patients remaining well after a lapse of from 3 to 14 years since the treatment Of these cases, 17 were round celled sarcomas, 17 spindle celled sarcomas 2 mixed celled sarcomas, one chondro sarcoma and one epithelioma In 4 cases no microscopic examination was made, yet the clinical features of the cases left hardly any doubt as to the diagnosis The late results are as follows Twenty one patients well from 5 to 14 years 26 well from 3 to 14 years, and 10 well from 10 to 14 years Up to the present time Coley has been able to collect 12 cases of sarcoma of the long bones in which the use of the toxins has rendered amputation unnecessary In 8 of these cases the sarcoma was of the round celled variety, in 2 spindle celled, and in the remaining 2 no microscopic examination was made, but amputation had seemed the only means of saving the patient's life Eight of these patients remained alive and well and free from recurrence from 3 to 8 years, one for 2 years, one for one year, 2 patients for less than six months Coley believes that there is a new field for the use of toxins, and that is their employment after all primary operations for sarcoma and possibly carcinoma, as a prophylactic against recurrence In about 25 cases in which he has carried out such prophylactic treatment the number of recurrences has been extremely small His plan has been to give two or three periods of treatment of from four to six weeks' duration

3 **Reinfection with Syphilis**—Brew describes a case seen by himself and treated at various times by two reputable physicians, in which there was every reason to believe that syphilis had existed and had been cured and that a reinfection had occurred The patient was treated carefully for an undoubted attack of syphilis, from which he recovered and remained without any syphilitic manifestations for fifteen years He was then treated for a hard chancre followed by a macular eruption and sore throat Marrying then, a syphilitic child was born to the couple, although the mother showed no evidence of ever having had the disease The manifestations of the second attack could not have been tertiary in their nature

4 **The Long-Waisted Woman and Her Movable Kidney**—Gallant believes that weight of clothing and compression at the waist line, at and after puberty, have an important effect on girls in producing movable kidneys He reviews 50 cases in which careful measurements were made

5 **Apomorphin in Acute Alcoholism.**—Rosenwasser speaks highly of the value of apomorphin in doses of from 1/30 to 1/10 grain as a sedative and hypnotic in cases of acute alcoholism A very few minutes after administering an emetic dose by hypodermic injection vomiting occurs, due to the action of the drug on the vomiting center of the medulla Just before vomiting the pulse is weakened and increased in frequency, and after vomiting ceases it becomes slower and stronger, often stronger and slower than it was before the injection was given Vomiting is preceded by salivation and slight nausea It may occur only once or be repeated several times Very soon after the vomiting subsides, a matter of a few minutes in most cases the patient falls into an apparently natural sleep and may sleep from two to eight hours, awakening refreshed, sober, and rational in most cases It is not necessary, however to give the emetic dose in order to obtain the hypnotic effect, and in many cases 1/30 grain will induce sleep

New York Medical Journal.

July 27

6 *Transfusion in Dogs on which Bilateral Nephrectomy has been Performed G W Crile and H P Cole, Cleveland
7 *Operations for Cleft Palate and Their Result G Hudson Makuen Philadelphia
8 Ear Nose and Throat Conditions in Children C Graef New York
9 *New Operation for Extirpation of Varicose Veins of Leg W W Babcock Philadelphia
10 Relation Between the Physiologic Action of Ions and their Physico-chemical Properties (Concluded) W N Berg, New York
11 *Phagocytosis etc. in Sputum as a Measure of Resistance in Tuberculosis. A H Allen, Trudeau N Y
12 *Consanguinity A Factor in Immunity to Scarlet Fever J W Brandeis New York
13 Treatment of Gonorrheal Epididymitis J J Valentine, New York

6 **Transfusion in Dogs After Bilateral Nephrectomy**—The experiments reported by Crile and Cole were undertaken to ascertain whether the life of a dog could be prolonged beyond its normal time, after bilateral nephrectomy In the five dogs in which no transfusion was performed the longest duration of life was 72 hours, the shortest 44 In the dogs that were transfused at the forty-eighth hour, one died 44 hours after transfusion, two dogs lived 18 hours, and another 42 hours The dog that was transfused at the seventy second hour lived 40 hours after transfusion, or 112 hours after nephrectomy The dogs transfused at the forty eighth hour lived, one 92 hours after nephrectomy, two 66 hours, and one 90 hours Comparing these survivals with those of other experimenters mentioned, it would seem that transfusion after this operation has no material effect on the length or duration of life

7 **Operations for Cleft Palate**—Makuen summarizes his paper as follows 1 An operation for the closure of a cleft palate should be done only when there is a fair likelihood of success 2 It should be done only by those having acquired special skill in nasopharyngeal and oral surgery 3 When it is probable that several operations may be necessary the parents or patient should be so informed 4 The operation should be done as early as possible 5 In the difficult adolescent cases the operation after a preliminary tracheotomy, as described by Dr McKernon, may be preferable 6 There are two reasons for attempting to close a cleft palate, namely, to improve the general health of the patient and to increase the efficiency of the faculty of speech 7 The general health of the patient is benefited in two ways, namely, by improving the hygiene of the nasopharynx and the oral cavity, and by improving the general morale of the patient 8 The speech is improved by a course of psycho physical training, in which the patient is taught first to recognize normal speech and then to make the best use of his still imperfect organs in its production

9 **Extirpation of Varicose Veins of Leg**—Babcock has devised a procedure by means of which almost the entire saphenous vein may be removed through two small incisions in from three to ten minutes, under spinal anesthesia The veins are extirpated by means of a special extractor, resembling a very long double ended *bougie à boule* A line is taken from a point one half inch internal to the center of Poupart's ligament running to the posterior margin of the inner condyle of the femur Across this line, about 2½ inches below Poupart's ligament, a transverse incision, one inch in length, is made through the skin and subcutaneous fat down to the muscular sheath The index finger is then inserted to the bottom of the wound, slid backward for a short distance close to the muscular sheath and then hooked inward and forward away from the muscle, when it at once catches the thick resistant cord of the saphenous vein, which is lifted into the wound and at once clamped above by a hemostat This maneuver enables the vein to be exposed within a few seconds, even in an obese patient The vein is then incised below the hemostat, and the hemorrhage at once controlled by entering the smaller bulb of the extractor into the lumen. The instrument is then carefully passed down the vein until it meets with an obstruction that can not be overcome The size and shape of the acorn tip of the instrument enables the extractor to slip through valves which would catch a smaller instrument At times the instrument readily passes to the ankle, again it is arrested in the middle or upper third of the leg The upper end of the vein where it surrounds the

sheath of the extractor is now isolated for a short distance and tied firmly to the shaft of the instrument by a strong silk ligature This controls all oozing from the open vein The vein is then ligated above and divided below the hemostat, and the stump dropped The lower end of the instrument is now located A half inch incision on the bulb exposes the vessel, the vein is separated from surrounding tissues for a short distance and clamped below, the bulbous expansion of the extractor is exposed, grasped and firm downward traction made on the *instrument* This traction pulls the vein loose from its surroundings, tears off the venous branches an inch or more from the main trunk, and causes the wall of the vein to be massed or pleated in small compass just below the upper bulbous expansion of the instrument The extractor is pulled from the lower incision with a fusiform mass of vein closely packed against the upper bulb of the instrument

11 **Measuring Resistance in Tuberculosis**—As the result of a very extensive study undertaken for the purpose of ascertaining whether or not the intracellular position of tubercle bacilli in the sputum, the presence of disintegrated forms, clumps of parallels or variations in acid resistance, gave any evidence of the resistance of the patient, Allen concludes that phagocytosis points but doubtfully to a good prognosis Fifty nine per cent of the cases showed phagocytosis, when the phagocytic index was applied, 82 per cent showed phagocytosis when all cases showing phagocytosis at any time were included

12 **Consanguinity and Immunity in Scarlet Fever**—Brandeis found that the percentage of contagiousness of scarlet fever among members of the same family, as derived from the original cases, reaches only the low figure of 10 per cent

Boston Medical and Surgical Journal

July 25

14 Hydrophobia and Its Prevention C P Sylvester, Boston
15 Uterosacral Ligaments D H Craig Boston
16 *Contamination of the Air of our Cities with Sulphur Dioxid the Cause of Respiratory Disease T W Schaefer, Kansas City Mo
17 *Case of Extensive Resection of the Stomach for Carcinoma F Cobb Boston
18 Department of School Hygiene L H Gulick New York
19 *Acute Inflammation of Tendon Sheaths Following Acute Tonsillitis F A Tracy, Boston

16 **Contamination of Air with Sulphur Dioxid**—Schaefer says that the weight of evidence concerning the relation of sulphur dioxid to public health indicates that its effects are really serious if not lasting on certain susceptible persons, and that its presence in atmospheric air is a positive menace to the hygienic welfare of beings

17 **Resection of Stomach for Carcinoma**—In the case reported by Cobb, about two thirds of the stomach were resected, and seventeen months after the operation the patient is alive and in apparently perfect health, and engaged in hard manual labor Cobb says that the case is primarily of interest because it presents a strong argument in favor of operation, in all cases of gastric cancer, even those which are apparently hopeless The patient, male, 52 years old, had been ill for seven months prior to the operation He presented all the typical symptoms of cancer of the stomach The tumor was situated on the anterior wall of the stomach extending from the middle line toward the pylorus The diseased area was exsected and the cut ends were united by end to end suture The patient now eats anything without distress, he does not vomit and has no symptoms of indigestion - There is no evidence of a recurrence of the disease The case is interesting also from a pathologic and etiologic point of view, inasmuch as it furnishes a striking illustration of the ingrafting of carcinoma on a previous gastric ulcer

19 **Acute Tenosynovitis Following Tonsillitis**—Tracy reports two cases of acute inflammation of the peroneal tendon sheaths following an attack of acute tonsillitis

Lancet-Clinic, Cincinnati

July 27

20 Diagnosis and Treatment of Brain Traumatism J N Sluss Indianapolis
21 *Head Injuries W B Burns Memphis Tenn

21—See abstract in The Journal, Dec 8 1906, page 1945

American Journal of Obstetrics, New York

July

22 *Appreciation of the Work of Dr Henry J Garrigues in Introducing Asepsis into Obstetric Practice B H Wells New York
23 *Ectopic Gestation and Treatment of Tubal Rupture H Robb Cleveland
24 *Dystocia Following Ventrofixation of the Uterus J Hurdon Baltimore
25 *Abdominal Signs of Pulmonary Disease in Children J D Thomas Washington D C
26 *Surgical Conditions of the Kidneys C H Chetwood New York City
27 *Traumatic Displacement of the Nongravid Uterus C Chase New York
28 *Volvulus of the Intestine G T Vaughan Washington D C

22—See abstract in The Journal, June 1 1907 page 1895

23—See abstract in The Journal, June 1 1907 page 1894

24 **Dystocia Following Ventrofixation**—Hurdon favors ventrofixation for the treatment of retrodeviations and prolapsus of the uterus, because the operation restores the woman to perfect health, and if any dystocia is caused thereby the adhesions may be released through a very small abdominal incision and thus permit the undisturbed progress of the labor Hurdon says that the earlier the operation is performed the better, but the seventh month is not too late If however the complication is not discovered until the last month of pregnancy it is advisable to wait until term since if Cesarean section should be found necessary, it could then be performed immediately

25 **Abdominal Signs of Pulmonary Disease in Children**—Thomas discusses the abdominal pains occurring during pneumonia and pleurisy, and reports a number of cases

26—See abstract in The Journal June 1 1907 page 1895

27 **Traumatic Displacements of Nongravid Uterus**—Two cases are reported by Chase One of the patients a young woman 17 years of age, was thrown violently from a bicycle, striking the pavement on her buttocks A rectal examination disclosed the uterus firmly wedged down into the hollow of the sacrum On sufficient pressure from below it was released and sprang back into normal position Relief from pain and nausea was almost instant, and the patient recovered completely in a few days The second case was unique The patient was under medical care and had been examined the day before the accident The accident consisted of falling backward from the fourth or fifth step of a stepladder the woman striking on her buttocks and back Vaginal examination showed a retroverted prolapsed and incarcerated uterus which was restored to its normal position only after the use of a considerable amount of pressure applied in Douglas' cul de sac The woman made a perfect recovery

28 **Volvulus of Intestine**—Six cases are reported by Vaughan, four of the patients were operated on and three recovered

Annals of Surgery, Philadelphia

July

29 *Results of Radical Operation for Cure of Carcinoma of the Breast W S Halsted Baltimore
30 *End Results of 276 Primary Operations for Carcinoma of the Breast R B Greenough C C Simmons and J D Barney Boston Mass
31 *Final Results in 164 Cases of Carcinoma of the Breast A J Ochsner Chicago
32 *End Results Following Operations for Carcinoma of the Breast N Jacobson Syracuse N Y
33 *End Results Following Operations for Carcinoma of the Breast J C Oliver Cincinnati O
34 *Carcinoma of the Breast A T Cabot Boston
35 *End Results Following Operations for Carcinoma of the Breast L S Pilcher Brooklyn N Y
36 *Late Recurrences After Operations for Carcinoma of the Breast J Ransohoff Cincinnati O
37 *Carcinoma of the Bones Following Carcinoma of the Breast H R Wharton Philadelphia
38 *Thymus Gland Treatment of Cancer F Gwyer New York
39 *Peritoneal Tuberculosis P Syms New York
40 *Acute Diffuse Gonorrheal Peritonitis C Goodman New York
41 *Treatment of Appendicitis L A Stimson New York
42 *Motor boat Fractures H P De Forest New York

29 **Carcinoma of Breast**—Halsted makes a very exhaustive and detailed report on 210 traced cases of carcinoma of the breast Of this number, 35 patients were reported living in 1906 07, 20 in 1905 Sixteen patients are known to have died of causes other than carcinoma of the breast three or more years after operation, and four patients died of other disease less than three years after operation in which the cure was demonstrated by autopsy Thus, 75 cases may be regarded as

cures, 53 6 per cent of the 210 traced cases In 14 cases metastases appeared after three years, in one instance manifesting itself as late as eight years, and in two instances more than six years after the operation Four of the 232 patients operated on died in the hospital Halsted says that the neck operations were responsible for the greatest mortality

30—This article also appeared in the *Boston Medical and Surgical Journal*, June 20, 1907

31, 32—See abstracts in The Journal, June 22, 1907, page 2150

33 **Carcinoma of Breast.**—Oliver gives complete histories of 35 cases Twenty two of the patients are dead, 12 are alive and well from three to ten and one half years after operation One patient is alive more than three years after operation, but has an inoperable recurrence The radical operation, without removal of the supraclavicular glands was performed 30 times The breast was removed and the axilla cleared out seven times The percentage of recovery after radical operations was 33 3 after the simpler operations it was 57 15 The mortality was least in those cases in which the tumor was located in the central area of the breast and in the lower third Oliver concludes that the most potent factor in prognosis is the histologic character of the neoplasm The prognosis becomes better when dealing with the hard, fibrous slow growing varieties

34 **Id**—Cabot reports 42 cases All the patients recovered from the operation and 9 are entirely free from recurrence after from four to nineteen years Five patients are still living though they have had a recurrence One of these was operated on three years ago, 3 were operated on four years ago and one five years ago The remaining 28 patients died of the disease 17 in one year, 2 in two years, one patient lived three years 2 others lived four years, and 6 lived five years Of the 9 patients who are well without recurrence the pectoral muscles were removed in 2 In the remaining 7 the breast and axillary contents were removed without removal of the muscles In the 5 patients still living with recurrence, the muscles were removed, with the breast and axillary contents Of the 28 patients who died, the muscles, breast and axillary contents were removed in 12. In the remaining 16 cases the breast and axillary contents alone were removed

35—See abstract in The Journal, June 22, 1907, page 2149

36—See abstract in The Journal, June 22, 1907, page 2150

37 **Secondary Carcinoma of Bones.**—Wharton reports 5 cases of carcinoma of bones following carcinoma of the breast, for which an operation had been done The bones involved in these cases were respectively the lumbar vertebræ, left clavicle both femurs, right femur, left femur One of the patients had not had the breast tumor removed In the remaining four the symptoms of bone involvement appeared six, five, six and eight months respectively, after removal of the breast tumor

38 **Thymus Gland Treatment of Cancer**—Gwyer makes a preliminary report on the treatment of cancer with thymus gland, and reports a case of inoperable cancer of the breast in which this treatment gave the patient great relief from symptoms The gland is given either dried, and ground to powder or as a watery extract of nucleo proteids and other elements The dose of the powder varies from 1 to 4 drams, three or four times a day Sodium phosphate half an ounce is given once a day to produce elimination Gwyer also refers to a number of other cases in which marked benefit resulted from this treatment It diminishes or eliminates pain and lessens the size of the growth Every patient so far treated has been considered beyond operation, and beyond hope of cure

39 **Peritoneal Tuberculosis.**—Syms reviews the literature with reference to the treatment of certain forms of peritoneal tuberculosis by laparotomy

40 **Acute Diffuse Gonorrheal Peritonitis**—Goodman reports one case to show that the gonococcus is capable of producing a local or a diffuse peritonitis, without the presence of other pyogenic bacteria

41 **Treatment of Appendicitis**—Stimson reviews his hospital experiences during the past four years, in the operative treatment of appendicitis During this time he has done 98 operation with only one fatality He employs the curved transverse incision, with longitudinal separation of the recti muscles, and the McBurney gridiron incision The stump was invaginated with a purse string suture in 37 cases, and in 40 it was simply tied Stimson believes in drainage, claiming that it gives him a feeling of security The one death occurred in a series of 13 cases of general extensive peritonitis

42 **Motor Boat Fractures.**—De Forest reports 9 cases of fracture of the carpal and metacarpal bones, and the bones of the wrist joint, caused by accidents incident to the running of motor boats

Journal of Experimental Diseases, New York.

July 17

43 *Histologic Comparison of Six Cases of Multiple Myeloma H A. Christian Boston
44 Histologic Lesions of Experimental Glanders C W Duval and P C White Montreal
45 Method of Differentiating in Sections of Tissue Bacteria decolorized by Gram s stain C W Duval Montreal
46 *Study of the Effect of Intravenous Injections of Solutions of Pancreatic Tissue A Egdahl Iowa City, Ia
47 Experimental Pleurisy E. L. Opie New York
48 Transformation of Serofibrinous into Purulent Pleurisy E L. Opie
49 *Differentiation of Streptococci by Means of Fermentative Tests L. Buerger New York
50 Extracellular and Intracellular Venom Activators of the Blood H Noguchi New York
51 *Influence of Reaction and of Desiccation on Opsonins H Noguchi
52 Spirochæta (Treponema) *pallida* and Syphilis S Flexner, New York.

43 **Multiple Myeloma**—Christian has made a comparative anatomic study of 6 cases of myeloma His results show a striking similarity of structure in all the cases, the differences being only minor ones The cells have a finely granular, slightly basophilic cytoplasm, an eccentric nucleus with nucleolus and nuclei membrane, and show a tendency of the chromatin to mural arrangement The tumor cells consequently resemble bone marrow plasm cells rather than myelocytes As most of the cases reported by others show cells with these characteristics, the conclusion is warranted that these tumors form a group within which no greater variation in cellular structure occurs than in other tumor groups

46 **Effect of Injections of Pancreatic Tissue.**—Egdahl, from experimental injections of solutions of pancreatic tissue obtains results indicating that the sudden collapse of acute pancreatitis is due to toxic substances derived from disintegrating pancreatic tissue It is probable that this toxic substance or substances are of the nature of aromatic and amino compounds

49 **Differentiation of Streptococci**—Buerger finds that streptococci from various sources vary greatly in their ability to produce acid fermentation of various carbohydrates In order that conclusions drawn from tests of this nature may have value they must be made only after growth in the media which are most favorable for the cocci His results give six groups of streptococci when tested with dextrose, levulose, galactose, maltose, saccharose lactose, inulin, dextrin and mannite namely, those fermenting all, all but mannite, all but inulin, all but inulin and mannite, all but inulin and lactose, and all but inulin, mannite and saccharose Inasmuch as a comparatively small number of strains has been tested in this way, definite classification is not warranted, but large series of tests should be carried out in order to determine whether streptococci are classifiable by fixed fermentative properties.

51 **Opsonins**—Noguchi shows that opsonins act best in neutral medium No opsonification occurs in a serum the alkalinity of which corresponds to more than 1 6 c c of 1/20 N solution or acid more than 5 c c of this concentration per 1 c.c. serum The opsonic index obtained with a native serum cannot be regarded as the expression of the action of all the opsonin, but only of so much as the degree of optimum of reaction permits to act, hence estimation of opsonic power in order to indicate as accurately as possible the exact amount of opsonin present should be made in neutral medium and with diluted serum All serum increases in opsonic power on diminution of original alkalinity Opsonins whose action is suspended by unsuitable reaction become active again if the reaction is brought to neutral unless the acid or alkali used approaches the strength of 1 N, when the alteration in the opsonin becomes permanent Alcohol or dehydration robs serum of its opsonin Serum remains practically unaltered in opsonic

power on desiccation at 23 C., and in a dry state opsonins are preserved for at least two years In this state they resist temperature up to 150 C, regaining their original thermolability when dissolved in the proper amount of water These characteristics of opsonins correspond to properties peculiar to ferments

Illinois Medical Journal, Springfield.

July

53 Rôle of Gross Parasites in Diffusion of Infectious Diseases R B Preble *Chicago*
54 *Achylia Gastrica and Its Relation to Diarrhea F Billings, Chicago
55 *Ulcerative Endocarditis J B Herrick, Chicago
56 Interstate Medical Reciprocity and Our Degraded Certificate C T Robinson Edwardsville Ill
57 Case of Hydatid Disease L B Ashton Quincy, Ill
58 Opsonic Therapy in Skin Disease R W McClintock, Chicago
59 *Opsonins—Opsonic Index and Vaccine Therapy J C Hollister, Chicago
60 *Report of Two Unusual Cases G D Lockie, Pontiac.

54—This article also appeared in the *Virginia Medical Semi-Monthly*, June 21, 1902, see abstract No 78

55—See abstract in THE JOURNAL, June 8, 1907, page 1981

59—See abstract in THE JOURNAL, June 29, 1907, page 2204

60 **Unusual Cases**—The first case reported by Lockie apparently was one of septicemia following confinement, but no evidence of infection was obtainable The patient suffered severely for four or five weeks, and then recovered without any treatment This occurred following two confinements The second time Lockie injected about 30 minims of the patient's milk into each arm repeating the injection on the second day, and recovery was immediate The second patient was an epileptic The seizures were severe and frequent Lockie secured some of the child's saliva, and injected about 10 minims into the buttock The child had no epileptic attacks for three days Lockie gave three injections, with the same results each time The child left the city, but it is said that the attacks had lessened in frequency

Dominion Medical Monthly, Toronto

July

61 Relation of the Medical Profession to the Public J W S McCullough Alliston Ont
62 *Case of Congenital Umbilical Hernia A. E McColl, Belleville, Ont.

62 **Congenital Umbilical Hernia**—McCall reports a case of large umbilical hernia, the ring measuring 3½ inches in diameter The sac protruded over four inches above the abdominal wall, and it was slightly transparent About one third of the intestines was in the hernia The baby was operated on nine hours afterward, under general anesthesia The hernial ring was removed completely and the edges of the wound were then brought together by means of sutures and supported by wide adhesive straps The opening closed in about ten days The child recovered completely, and is now 2½ years old, well and strong

Medical Library and Historical Journal, Brooklyn

March

63 Charles White Surgeon and Obstetrician J G Adami, Montreal
64 Ælius Aristides, a Hypochondriac in the Time of the Antonines W A Holden New York
65 Biography of François Magendi (Concluded) P M Dawson, *Baltimore*
66 Should the Size or Growth of a Medical Library be Restricted? C P Fisher, Philadelphia

The Laryngoscope, St Louis

May

67 Cauterization of Four Susceptible Areas of Nasal Mucosa G Killian Freiburg Germany
68 Chronic Suppuration of Frontal Sinus H P Mosher Boston
69 Rapid Entrance of Maxillary Antrum Through Inferior Meatus Without General Anesthesia H H Curtis, New York
70 Treatment of Chronic Empyema of Antrum of Highmore J H Abraham, New York
71 Resection of Cartilaginous Septum D B Kyle, Philadelphia
72 Excision of Intrinsic Malignant Growths of Larynx J Solis Cohen Philadelphia
73 Non Recurrent Carcinoma of Larynx Removed from Natural Passages E F Ingals Chicago
74 *Trypsin in Laryngeal Epithelioma H Dupuy, New Orleans
75 Frontal Sinus Operation M Halle, Berlin
76 Blunt and Cutting Laryngeal Dilator and Self Acting Epiglottis Lifter J W Gleitsmann New York
77 New Antral Chisels and Technic in Opening Maxillary Sinus A M Corwin, Chicago

74—See abstract in THE JOURNAL, July 13, 1907, page 189

Virginia Medical Semi-Monthly, Richmond

June 21

78 *Achylia Gastrica and Its Relations to Diarrhea F Billings, Chicago
79 Is Gaseous Disinfection Reliable? J F Armentrout Staunton, Va
80 Alkaloidal Therapeutics J Burke Manitowoc Wis
81 Prophylactic Pediatrics C C Wallin, White Sulphur Springs, Mont
82 Principles of Surgery (Continued) S McGuire Richmond

78 **Achylia Gastrica and Diarrhea**—Billings reports 4 cases, which he believes afford sufficient evidence to show that achylia gastrica exists in individuals who apparently suffer from no organic disease of the stomach, and no constitutional dyscrasia, or malnutrition of sufficient degree to cause it, and that it may therefore be caused by a general neurotic condition The treatment consists in an attempt to improve the general nervous tone of the individual, and in increasing the general nutrition by frequent small feedings of food of such a character that the unavoidably undigested remnants, which remain in the intestine, will cause as little disturbance as possible Thorough division of food by mastication is essential The retention of undigested particles in the colon may be overcome by a colonic flushing Moist hot applications will relieve colic

Pennsylvania Medical Journal, Athens

June

83 Laryngectomy for Malignant Disease Case of Laryngeal Epithelioma C Jackson Pittsburg Pa
84 *Ocular Infections Due to Disease of the Conjunctiva and the *Lachrymal Passages* E A Shumway, Philadelphia
85 Postoperative Infection in Eye Surgery G E Curry, Pittsburg
86 **Treatment of Ulcer of the Cornea* E Stieren, Pittsburg
87 Affections of the Eye Arising from Autointoxication of Endogenous Origin H F Hansell Philadelphia
88 Quarantine A B Brumbaugh Huntingdon Pa
89 Use and Abuse of Bromids in Epilepsy M Woods Philadelphia
90 Hematuria Due to Small Doses of Urotropin T G Beardsley Philadelphia
91 Case of Abdominal Pregnancy with Postmortem Report B F Myers, Chambersburg, Pa

84—See abstract in THE JOURNAL, Sept 29, 1906, page 1049

86—See abstract in THE JOURNAL, Oct 6, 1906, page 1130

Wisconsin Medical Journal, Milwaukee

June

92 Significance of Traumatic Cranial Defects A P Mueller, Milwaukee
93 Early and Qualifying Diagnosis of Tumors of the Urinary Bladder G Kolischer, Chicago
94 Plea for Early Radical Operation in Femoral Hernia R Elmergreen, Milwaukee
95 Case of Transverse Rupture of the Membranous Urethra in the Male K W Doege, Marshfield Wis

Western Medical Review, Omaha

June

96 President's Address of the Nebraska State Medical Association F A Long Madison Neb
97 Disease of the Right Superior Quadrant C C Allison Omaha
98 Diagnosis and Treatment of Gastric Ulcer J M Mayhew, *Lincoln*

Journal of the South Carolina State Medical Association, Greenville

June

99 Arteriosclerosis of the Uterine and Pelvic Blood Vessels with Symptoms Resembling Cancer of the Uterus C M Rees, Charleston
100 Importance of Routine Examination of the Feces for Intestinal Parasites J C Sosnowski, Charleston
101 General Paralysis or Paresis J T Watson Columbia
102 The Pharyngeal Lymphatic Ring F W Carpenter, Greenville

Texas State Journal of Medicine, Fort Worth

June

103 Unity and Harmony in the Medical Profession G B Foscue, Waco Tex
104 Individualism in Medicine as Influenced by Medical Education W S Carter, Galveston, Tex

Fort Wayne Journal-Magazine

June

105 Surgical Corrections of Hook Nose C C Miller Chicago
106 Quadruplets S V Wilking, Roanoke, Ind

Detroit Medical Journal

June

107 The Hospital Problem in Detroit W L Babcock Detroit, Mich
108 Local Anesthesia in Operations for Hernia and Varicocele A McLean Detroit
109 Fallacies in Appendicitis G R Cruickshank Windsor Ont.
110 Progress in Internal Medicine F Smithies Ann Arbor
111 Introduction to the Study of the Infant's Stool (Continued) P Selter Solingen, Germany

Archives of Otology, New York.

June

112 Origin of Cells Found in the Deeper Layer of the Stria Vascularis. G E Shambaugh Chicago
113 Value of v Stein's Symptom in Diagnosis of Labyrinthine Suppuration W P Eagleton Newark
114 Diagnosis of Purulent Inflammation of Labyrinth Indications for Opening a Purulently Affected Labyrinth V Hinsberg Breslau
115 Ocular and Orbital Symptoms in Diseases of the Sphenoidal Cavity H Schroeder, Erlangen

Journal of the New Mexico Medical Society, Albuquerque.

June 15

116 Relation of Christian Science to the Practice of Medicine S A. Milliken Silver City N M
117 The General Practitioner in Prevention of Tuberculosis C W Taylor Goodman, Albuquerque

Buffalo Medical Journal.

June

118 Obstruction of the Intestine M Clinton, Buffalo
119 Achylia Gastrica. I H Levy Syracuse
120 Conservatism in Modern Therapeutics M. E Gregg Elbridge, N Y
121 Case of Pancreatic Cyst W D Johnson Batavia N Y
122 Case of Monocular Hysterical Amblyopia D B St J Roosa New York.

Annals of Gynecology and Pediatry, Boston.

June

123 The Obstetric Forceps J B Cooke New York

American Practitioner and News, Louisville, Ky

June

124 Effects of High Arterial Tension on Tissues of the Eye W Cheatham, Louisville
125 Importance of Medical Research to the Practice of Medicine J A Flexner Louisville

American Journal of Urology, New York.

June

126 Treatment of Infectious Pyelonephritides H Juy Paris, France
127 Cases of Voluminous Renal Calculi. A. Pérard, Paris
128 Case of Sarcoma of the Bladder G S Whiteside, Portland, Ore

Journal of the Michigan State Medical Society, Detroit.

June

129 *The Uplands in Medicine C. B Stockwell Port Huron
130 Ventilation of School Buildings T S Ainge Lansing
131 Treatment of Cancer W T Dodge Big Rapids
132 Case of Endothelioma of Breast C E Simpson Detroit.
133 Importance of Complete Extirpation in Tonsil Operations E T Morden Adrian.
134 Summer Diarrhea. J M. Sattler Manistique

129—See abstract in The Journal, July 6, 1907, page 71

St. Louis Courier of Medicine

June

135 Kidney Congenitally Located in Pelvis B Robinson Chicago
136 Municipal Control of Measles. J Zahorsky St. Louis
137 Surgery of Tuberculous Peritonitis E A. Babler St. Louis
138 Roentgen Ray in Practice H N Chapman, St Louis
139 Sudden Death in Diphtheria. A. S Bleyer, St Louis

FOREIGN

Titles marked with an asterisk (*) are abstracted below Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 13

1 *Simulation of Malignant Disease by Chronic Inflammatory Affections of the Sigmoid Flexure. K. W Monsarrat.
2 *Diagnosis and Treatment of Appendicitis W H. B Brook.
3 *Acute Appendicitis. A. H Burgess
4 *Treatment of Complications and Sequelæ of Gastric and Duodenal Ulcers J L. Thomas
5 *Nephrectomy G Barling
6 Case of Pyonephrosis Containing Typhoid Bacilli in Pure Culture. F L. A. Greaves.
7 Suprapubic Litholapaxy R. Heard.
8 *Suppurating Vaginal Cysts J B Hellier
9 *Spreading Peritonitis Cured by Drainage of the Pelvis Fowler Position and Rectal Instillation of Saline Solution C H Whiteford
10 Life Cycle of Species of Herpetomonas Found in Culex Pipiens W S Patton
11 Duty of Restoring Hearing by Operation in Chronic Aural Suppuration C. J Heath
12 Gumma of the Ciliary Body G V Miller
13 Calcium Chlorid in Hemorrhage. A. C Lambert
14 *Treatment of Ménière's Disease and Ménière's Symptoms by Seaton T W Parry

1 **Chronic Inflammatory Affections of Sigmoid.**—Monsarrat reports two cases In the first case the symptom suggested a carcinoma of the sigmoid flexure and acting on this basis, operation was advised. A large mass was removed and on examining it Monsarrat found that there was no malignant growth at all simply a perisigmoiditis, which gave rise to a considerable exudation and the building up of scar tissue to an extent sufficient to give the physical findings of a tumor The second patient also presented signs and symptoms suggestive of malignant disease of the sigmoid, but the diagnosis was reserved because of the length and cylindrical shape of the swelling However, operation was advised, and on opening the abdomen the whole length of a rather short sigmoid loop was found converted into a rigid walled tube and bound down to the parietal peritoneum of the left iliac fossa by old standing adhesions

2 **Appendicitis.**—That the majority of patients with appendicitis will get over the attack if treated on simple medicinal lines is claimed by Brook but he advises removal of the appendix during the quiet period If any sign of fulmination appears during the attack, operation should be done at once If there is suppuration, and all is going otherwise satisfactorily, Brook defers operation until after the fifth day, care being taken not to open the general peritoneal cavity If the appendix presents in the wound, it should be removed but no elaborate search should be made for it In general suppurative peritonitis Brook resorts to drainage, massive infusions and calomel

3 **Id.**—Burgess advises early removal of the infected appendix He reports 47 cases with a mortality of 8 5 per cent This, he thinks is unquestionably the result of the operation being delayed too long Only 4 deaths occurred, 2 in abscess cases and 2 in general peritonitis

4 **Gastric and Duodenal Ulcer.**—Thomas discusses immediate treatment of perforation of gastric and duodenal ulcers In ordinary cases he thinks the proper treatment should be the following 1 Placing the patient in the horizontal position 2 The administration of morphin in sufficient doses to relieve pain and to check peristalsis 3 The avoidance of palpation and manipulation of the abdomen 4 The emptying of the stomach by means of a stomach pump Ordinary siphonage is unsatisfactory, because the solid contents of the stomach can not thus be satisfactorily removed 5 No food nor drink to be given by the mouth 6 The abdomen should be covered with several inches' thickness of absorbent cotton and bandaged 7 Water and food to be given by the rectum only

5 **Nephrectomy.**—Barling always goes into the loin when he wishes to remove a kidney He ties the constituents of the pedicle separately He has never attempted partial nephrectomy, nor has he performed nephrectomy for injury of the kidney He has done the operation 39 times, with one death, a case of pyonephrosis and perinephritic suppuration In 2 cases the nephrectomy was done for hypernephroma Ten of the patients can not be traced Of the remaining 29, 28 are alive and well

8 **Suppurating Vaginal Cysts.**—Hellier reports two cases in which he thinks the cysts were derived from Gaertner's duct There was no history of gonorrhea in either case

9 **Peritonitis.**—In the case reported by Whiteford there was involvement of the peritoneum below the level of the transverse colon The transverse colon was enormously distended by flatus and required puncture and suture in two places before it could be replaced A rubber drainage tube was passed to the bottom of the pelvis through a suprapubic incision No effort was made to wash or swab out the turbid fluid Continuous rectal instillation of warm saline solution was begun immediately after the operation and was continued for three days The patient was kept in the Fowler position all the time The cause of the suppuration was thought to be an infected appendix, ovarian cyst or Fallopian tube

14 **Treatment of Ménière's Disease by Seton.**—Parry inserts the seton in the nape of the neck on that side on which the ear trouble is most pronounced Pinching up a good fold of skin, he passes a sharp knife through it in such a way that the entrance and exit incisions lie from one and a half to two inches apart after the fold has been freed These incisions are best made in a slanting direction, so that what discharge may form will tend to gravitate to the lower one The knife is kept in position (passed from the lower to upper incision) until one has inserted into the upper incision a sterilized bodkin threaded with a piece of sterilized tape, about three fourths inch broad and about 20 inches long As the knife is withdrawn through the lower incision the bodkin follows it

from the direction of the upper incision, and thus the seton is passed Parry uses a long piece of tape, as the old practice of pulling the same piece of material from side to side each day does not commend itself to him in that it is both dirty and unsurgical He pulls a fresh piece of tape through each day and cuts off the old portion that has lain in the wound during the previous twenty-four hours The long end is bunched up in a small pocket made of boracic gauze (about the same size and shape as the chamois leather watch pockets provided by jewelers) with a small flap, so as to keep the unused tape sterile When the long piece is coming to an end Parry stitches on a fresh piece, and so on The gauze pocket should be placed above the higher incision, so that it may not become contaminated by discharge Each day the wounds should receive an antiseptic wash and be covered afresh with a long pad of boracic gauze There is then no fear of sepsis, and the patient may wear the seton for six months practically without any pain or discomfort Nitrous oxid should be administered during the passing of the seton, and in quick hands the little operation is said to take only a few seconds

The Lancet, London

July 13

15 Plague W J R Simpson
16 *Significance of the Most Frequent Hernia in Childhood E M Corner
17 *Treatment of Lupus Dr Dreuw
18 Acute Lead Encephalopathy Following Use of Diachylon Pills as Abortifacient H F Warner
19 *New Method for Using Roentgen Rays A H Pirie
20 *Prophylactic Use of Antitoxin in Epidemic Diphtheria F L Norton
21 *New Fluid for Hematocytometer A Edington
22 Bread as Source of Uric Acid R Saundby
23 *Symptoms and Treatment of Hay Fever J A W Pereira
24 Case of Appendix in Femoral Hernia F C Doble

16—See abstract in The Journal July 20 1907, page 280

17 **Treatment of Lupus**—The treatment employed by Dreuw consists in thorough surface cauterization, from two to four times every four or six weeks, of areas previously frozen by means of ethyl chlorid, or by carbonic acid gas if a deeper effect is desired Over this frozen surface crude hydrochloric acid is rubbed thoroughly and with a certain degree of force Dreuw claims for this method cheapness, simplicity, ease of appplication and good cosmetic results It can be applied in all forms of lupus and in all situations, with the exception perhaps of the eye It is said to be an excellent preliminary treatment for later Finsen treatment

19 **New Method for Using Roentgen Ray**—Pirie describes a device invented by him for the purpose of measuring the dose of the Roentgen ray It is called the quantimeter and enables the operator to accomplish in an hour what formerly took four hours

20 **Prophylaxis in Diphtheria**—Norton discusses an epidemic of diphtheria which occurred in a school in which the arrest of the spread of the epidemic is attributed to the prophylactic use of antitoxin The dose was 500 units and about 180 children were injected

21 **New Fluid for Hematocytometer**—The solution employed by Edington has the following composition Neutral citrate of sodium, 7 5 grams, formalin, 2 c c , dahlia (Gruebler) 0 03 gram chloroform 5 drops, and distilled water 250 c c After standing two or three days the solution is filtered

23 **Hay Fever**—Pereira maintains that hay fever begins as a hyperemia of the conjunctiva and that the other symptoms are mostly reflex He associates hay fever with pterygium, and claims that sufferers from pterygium are invariably great sufferers from hay fever He advises that sufferers from hay fever wear colorless glasses and that the eye condition is the one to be treated

The Practitioner, London

July

25 *Diabetes Mellitus from the Physiologic Standpoint W D Halliburton
26 *The Pancreas and Diabetes Mellitus J R Bradford
27 *Basis of Therapy in Diabetes I W Hall
28 *Diet in Diabetes M Labbé
29 *The Heart in Relation to Diabetes L Brunton
30 Carlsbad Treatment of Diabetes and Glycosuria F Kraus
31 Nervous Symptoms Associated with Glycosuria J Taylor
32 *Skin Disease Associated with Diabetes M Morris
33 Ocular Complications in Diabetes Mellitus W H H Jessop
34 Pulmonary Complications of Diabetes J J Perkins
35 Diabetes and Insanity T B Hyslop
36 Diabetic Gangrene C Wallace
37 *Diabetes in Children H M Fletcher
38 Urine in Diabetes A P Beddard
39 Clinical Significance and Treatment of Acetonuria W L Brown
40 *Testing for Sugar in Urine W G Smith
41 Gouty Glycosuria A W Sikes
42 *Treatment of Diabetes Mellitus and Chronic Glycosuria R T Williamson
43 Treatment of Diabetes Mellitus by Drugs A R Parsons
44 Glycosuria and Life Insurance B Dawson

25 **Diabetes Mellitus**—Halliburton agrees with those who claim that the term diabetes mellitus includes many pathologic conditions, which all possess, in common the symptom of excess of sugar in the blood and therefore in the urine He gives an outline of the subject from the physiologist s point of view

26 **Pancreas and Diabetes**—Bradford discusses the diseases of the pancreas as a cause of diabetes Three cases are reported Two of them present many points of similarity, and suggest the view that some pancreatic lesion such as chronic pancreatitis, gave rise to signs suggesting the presence of a malignant growth, and the subsequent disappearance of the tumors was accompanied by the development of very severe diabetes The third patient apparently suffered from an attack of so called catarrhal jaundice When the jaundice subsided diabetes of a very severe type suddenly developed Bradford suggests that, perhaps, an inflammatory swelling of the head of the pancreas was responsible for the jaundice and the diabetes

27 **Basis of Therapy in Diabetes**—Hall atempts to show that the main object in the management of diabetes is to raise the carbohydrate capacities of the tissue cells by the use of conditions which increase the utilization of the fed carbohydrates diminish the amount of unused sugar and decrease the acetonuria and the acidosis He reviews the work of von Noorden, Naunyn and others

28 **Diet in Diabetes**—Labbé discusses this subject with reference to two varieties of diabetes 1 Cases associated with loss of nutrition 2 Cases in which there is no loss of nutrition The dietary he prescribes consists of four parts 1, The fundamental carbohydrate, 2, the accessory carbohydrates, 3, the albuminous, fatty and alcoholic foods, 4, the forbidden foods He urges that each must be prescribed by weight and never left to the patient's caprice He says that the diet, which has a powerful and positively curative effect on diabetes without loss of nutrition, is most frequently ineffective in cases of diabetes in which there is loss of nutrition

29 **The Heart in Diabetes**—Brunton says that in young diabetics there is a tendency to malnutrition of the cardiac muscle and the cardiac nerves, leading to functional disturbance and possibly to sudden death There seems also to be a tendency to the appearance of atheromatous change in the vessels generally and in the coronary arteries especially leading fatty degeneration feebleness of the heart and angina pectoris He insists on the administration of calcium phosphate or lactophosphate in any case of tachycardia, palpitation or cardiac weakness and dilatation occurring in patients with diabetes uncomplicated by gout In such cases a proteid diet with a minimum of carbohydrates is indicated Brunton says that while digitalis is useful in a case of diabetes without gouty complications it must be used with great care in cases of gouty glycosuria In such cases the tendency of digitalis and strophanthus still further to increase the tension should be counteracted by the administration at the same time of nitrite of soda He thinks that the combination of salicylate of soda, or some of the other salicyl derivatives, with codein is sometimes serviceable

32 **Skin Diseases and Diabetes**—Morris emphasizes the importance of treating the underlying constitutional state Locally daily alkaline baths are said to be particularly useful Weak solutions of permanganate of potash or sodium borate should also be applied several times a day, and the parts should be powdered with some soothing powder such as bismuth or oxid of zinc and contiguous surfaces should be kept apart with muslin bags When the acute symptoms have subsided Morris applies a weak resorcin ointment Ulcerated surfaces and gangrenous conditions must be dealt with in the usual manner

37 Diabetes in Children—Fletcher gives a short account of the clinical features of diabetes mellitus, occurring in children The treatment, he says, differs in no essential details from that to be followed in the case of adults If the urine does not give the iron reaction, the carbohydrates may be gradually reduced but if the reaction is present the greatest care should be exercised in their reduction The onset of the reaction, or of drowsiness, should be met with an addition of carbohydrates to the diet Fletcher declares that in the case of the child a strictly carbohydrate free diet can rarely, if ever, be adopted without bringing about an increase in the acetone and aceto acetic acid reaction, and a greater liability to coma

40 Testing for Sugar in Diabetes.—If any doubt or difficulty arises as to the result of the copper test, Smith advises recourse to the bismuth test of Boettger

42 Drugs in Diabetes—Williamson insists that before beginning the treatment of any case of diabetes with drugs it is important to determine the form of the disease, and to make a very careful examination for various complications If a moderately restricted diet causes the sugar excretion to cease, no drug treatment is required But in the other cases in which the sugar excretion can not be arrested by diet, or can only be arrested by a most rigid diet, which the patient finds it difficult to tolerate for a lengthened period, drug treatment is desirable.

Annals of Tropical Medicine and Parasitology, Liverpool.

June

45 Automatic Oiler for the Destruction and Prevention of Mosquito Larvæ in Cesspools and Other Collections of Water E H Ross and H C Ross
46 Anatomy of the Proboscis of Biting Flies J W W Stephens and R Newstead.
47 Trypanosome Transmission Experiments J E Dutton J L Todd and J W B Hanington
48 Cattle Trypanosomiasis in the Congo Free State. J E Dutton J L Todd and A. Kinghorn
49 Treatment of Experimental Trypanosomiasis B Moore M Nierenstein and J L Todd

Bulletin de l'Académie de Médecine, Paris

50 (Year LXXI No 23 pp 695 716) *Treatment of Syphilis with Sodium Anilin Arsenate according to Salmon s Technic (Traitement de la syphilis etc) H Hallopeau

50 Treatment of Syphilis with Sodium Anilin-Arsenate—Hallopeau reports the results of the use of this drug in 120 cases of syphilis his conclusions being that it has a powerful action on the infectious agent He protests against its common name atoxyl," as this is purely a fancy name and conveys an erroneous impression, as the drug is toxic to a high degree In his experience with syphilis secondary associated infections seemed to be uninfluenced by the drug, as well as what he calls the syphilitic deuteropathies If the injections could be continued long enough, he says, there is no doubt that the disease might be cured, but this is not possible in practice owing to the symptoms of intolerance which are observed after a variable number of injections The signs of intolerance include gastrointestinal pain nausea vomiting general malaise painful sensations in the limbs, dysuria fainting and chilliness These symptoms are generally mild and transient but sometimes they are severe and distressing They can be avoided by restricting the number of injections and using very small doses after the first two injections, lengthening the intervals and suspending the injections at the first sign of abnormal sensations Small persons, the aged and those with organic affections are predisposed to these disturbances and should be given smaller dosage The drug has a cumulative action so that the effect can be kept up even when the dose is reduced and the intervals lengthened It seems to be probable he states that in the organism the drug splits up at the end of a certain time into toxic products, this seems to be the only explanation possible for the abrupt onset of signs of intolerance without any premonitory symptoms The greater or less rapidity and extent of this splitting up into toxic products explains the difference in the tolerance observed in different patients He declares that a more stable compound should be sought for The drug is soon eliminated from the body, not a trace can be found in the urine by the end of two weeks Salmon believes that the course of treatment can then be commenced anew Further experience will show whether there is danger of chronic arsenic intoxication or whether immunity might not be obtained, like that of the arsenic eaters He discusses the part played by the anilin and that of the arsenic in the origin of these accidents suggesting that the drug should be given a trial in combination with mercury and iodid and also in local injections The experiences of Metchnikoff and Salmon indicate that this drug administered to monkeys, after contact infection, aborted the disease

Presse Médicale, Paris

51 (XV, Nos 35 38, pp 281 312) *Intestinal Occlusion by the Foramen of Winslow (Occlusion intestinale par le hiatus de Winslow) P S R Branca
52 Pathogenesis of Orthostatic Albuminuria (Albuminurie orthostatique) A Challer
53 Instrumentation for Thermocauterization (Cautérization ignée) Concluded P Desfosses and A Martinet.
54 Valuable Therapeutic Properties of Small Grained Electric Colloid Metals (Métaux colloides électriques à petits grains) H Iscovesco
55 Structure of the Nerve Cell during its different Functional States (Struct. de la cellule nerv) A Policard
56 Present Status of Spinal Anesthesia with Stovain (Rachistovainisation) L Kendirdjy

51 Intestinal Occlusion by Foramen of Winslow—Branca shows the varying anatomic conditions and modes of intestinal occlusion at this point, in twenty illustrations, and advises access by loosening the descending portion of the duodenum The route between the portal vein and the bile duct, advocated by certain writers, he asserts, is far more difficult and dangerous

Archiv f klinische Chirurgie, Berlin

57 (LXXXII No 2 pp 281 614) Vaginal Process of the Peritoneum and Origin of Interparietal Inguinal Hernia (Proc. Vag Perit und Leistenbrüche) S Cohn
58 Bacterial Appendicitis, especially Streptococcal (App) E Halm
59 Pathologic Anatomy of Multilocular Echinococcus Cyst (Ech) K Elenevsky
60 Aseptic Suture of the Intestines (Darmnaht) M I Rostowzew
61 Fistula between gall bladder and bronchus Recovery after Laparotomy (Gallen Bronchus-Fistel) O Klauber
62 Diagnosis and Treatment of Congenital Enlargement of the Colon. (Hirschsprungsche Krankheit) F Neugebauer
63 Amputation of Thigh by Gritti Technic. (Amp des Oberschenkels) A Bloch
64 Treatment of Uncomplicated Fractures of the Malleolus and late Results of Treatment (Malleolarfract) E Bibergeil
65 Plastic Operation on Esophagus (Oesoph Plastik) W Rokitzky
66 Regeneration of Gall Bladder after Partial Removal (Gallenblase nach partielle Cholecystektomie.) von Stubenrauch

Beiträge zur klinischen Chirurgie, von Bruns', Tübingen

67 (LI No [illegible] Pp 503 782) Dissecting Osteochondritis and Free Bodies in Joints (Ost dissecans und Gelenkmäuse) Lindenstein
68 *Abdominal Injuries (Bauchverletzungen) W Hagen
69 *Jejunostomy (Jejunostomie) A Loyal
70 *Ideal Cholecystectomy (Zur Frage der id Chol) O Thorspecken
71 Superficial Lymphangioma especially the Cystic Form in the Neck (Oberflächliche L mit bes Berücks der cyst Formen des Halses) Paetzold
72 *Absorption by the Peritoneum and its Importance in Bacterial Peritonitis (Perit Resorption) A Pelzer
73 *Affections of Abdominal Cavity due to Ascarides (Askaridenerkrankungen) E Sehrt
74 *Hemorrhages from Uterine Adnexa (Blutungen aus den Adnexen) W Noetzel
75 Absorption of Bacteria by way of Lymph and Blood and Rôle of Lymph Glands (Bakt Resorption auf dem Lymph und Blut Wege) Id

68 Injuries of the Abdomen—Hagen reports about 100 cases of abdominal injuries observed in Göschel's service at Nuremberg The outcome was much better in the cases with stab or shot wounds or other open injuries of the abdomen than in cases without an external wound as operative treatment was always undertaken more promptly This arrests the diffusion of infectious agents through the abdominal cavity much earlier than in case of contusions in which the uncertainty of the diagnosis leads to more expectant treatment The total mortality was 49 per cent of 94 cases In 45 cases in which some viscus was injured subcutaneously the mortality was 68 per cent, while it was only 54 per cent in the 26 open injuries of abdominal organs None of the 8 patients with isolated injury of the kidneys died, but 27 died out of the 37 with injury of the stomach or intestines or both About 80 pages are devoted to the article, which concludes with an extensive bibliography

69 Jejunostomy—Loyal reports the details of 25 operations in which jejunostomy was done by Garré at Königsberg The operations were for cancer in 20 cases, and for ulcer or its complications in the others One patient succumbed to hemorrhage from a hemorrhagic ulcer, another to peritonitic complications of a very large cancer, another to marasmus from carcinomatous peritonitis with ascites, and another with cancer to pulmonary embolism—a total mortality of 4 out of 25 cases The most rapid technic is always chosen, the Witzel fistula, with special care to insure favorable mechanical conditions for the outflow, the opening into the intestine being made as low down as possible The fistula answered its purpose perfectly and healed after withdrawal of the catheter without complications In a few cases there was considerable atony of the stomach afterward, but this disappeared at once after pumping out the stomach

70 **Cholecystectomy**—Thorspecken states that the gall-stone affection was completely cured in twenty six out of twenty-nine cases by this operation, but three others presented evidences of recurrence Surgery is an empirical science, he remarks, and if experience shows that better results are obtained by operation, then the theoretical benefits of drainage should be disregarded The choice of cases in which to operate is the main point, the failures in his experience being always in the cases with strong indications for drainage Cholecystectomy is indicated only when it is possible to exclude the presence of a stone in the common bile duct, and only when the composition of the concrements in the gall bladder or cystic duct render it improbable that any can be overlooked, as might occur in case of numerous small stones or gravel In these cases it is necessary to slit the common duct and to drain the hepatic It is also generally necessary to drain in case of considerable infection of the biliary passages, even although it is scarcely possible to avoid local peritonitic processes by so doing Even these restrictions leave a large number of cases in which the simpler method can be applied with the best results The number will increase when the indications for cholecystectomy are enlarged at the expense of cholecystostomy, which the Heidelberg experience, as well as Kehr's, shows will be a gain in every way

72 **Peritoneal Absorption**—Peiser has continued his experimental studies on absorption by the peritoneum and reiterates his former distinction between acute and chronic absorption By this he means that after the first phase of acute absorption the peritoneum seems to regulate the amount absorbed, not allowing so much to pass as before, this second phase of inhibited or chronic absorption seeming to parallel the elimination through the kidneys The more promptly the acute phase passes into the chronic phase, the better the prognosis The text-books teach that a disturbance in peritoneal absorption favors the development of peritonitis, but his experimental work speaks directly against this idea The toxins contained in the bodies of the bacteria are set free by bacteriolysis, and when enough of these toxins has been absorbed to reach the fatal dose then the animal succumbs Rapid, extensive bacteriolysis is, therefore liable to prove injurious unless the bacteria can be removed and these endotoxins drained away This suggests the possible benefits of a combination of serum treatment and prompt surgical intervention, with drainage

73 **Abdominal Affections Due to Ascarides**—Sehrt's patient was a woman of 49, who was operated on for supposed cancer of the stomach, but the organ was found sound and the trouble was traced to a large tumor in the lesser omentum The surfaces of the liver and of the tumor were studded with numbers of miliary nodules Large numbers of eggs of the ascaris were found in the necrotic masses in the tumor and in the nodules A female had probably made its way to this point and died after depositing its eggs Both the worm and its eggs had become encapsulated in time after a local inflammatory process Each egg was found in the center of a large giant cell The eggs in the pus were still viable

74 **Hemorrhages from the Uterine Adnexa into the Abdominal Cavity**—Noetzel reports 30 cases and urges immediate laparotomy, with scrupulous removal of all the blood and relics of old hemorrhage Since losing one of the patients from peritonitis he always drains for twenty four hours The pelvis is lowered at the close of the laparotomy and the abdominal cavity thoroughly rinsed out with salt solution It must be borne in mind that the patient after such loss of blood is peculiarly non resistant to infection The latter is more to be feared than the hemorrhage

Correspondenz-Blatt f Schweizer Aerzte, Basle

76 (XXXV, Nos 21-22 pp 665 728) Buttermilk in Infantile Gastrointestinal Affections (Buttermilch zur Ernährung magendarmkranker Säuglinge) M Stooss
77 Automatic Apparatus for Permanent Extension of Fractures (Permanentextension von Knochenbrüchen) H Zuppinger
78 *Treatment in Total Loss of Scalp (Ueberhäutung und Wundbehandlung bei totaler Skalpierung des Kopfes) E Enz
79 (Nos 23 24 pp 729 792) Indications for use of the High Forceps, with special regard to Axis Traction (Anlegung der hohen Zange) T Wyder
80 Operative Treatment of Backward Displacement of the Uterus (Op Behandlung der Rückwartslagerungen der Gebärmutter) S Stocker
81 Principles of Morphologic Examination of Blood (Morph Bluntuntersuchungen) H Naegeli
82 Internal Treatment of Streptomycoses with Formaldehyd (Behandlung der Streptomykosen mit Formaldehyd) Schwarzenbach

78 **Total Loss of Scalp**—Enz describes a case of complete loss of the scalp, including eyebrows, the hair was caught in the gear of a centrifugal cream separator He also gives summaries of twenty five similar cases which he has collected from the literature The ultimate outcome is not known in two, but twenty patients were cured The defect was covered with Thiersch flaps, and in the case reported the flaps healed so perfectly in place that there is no cicatricial retraction, although the defect extended to the back of the neck The main points in treatment are to protect the flaps against pressure and the wound from infection Attempts to apply flaps taken from the scalp proved only partially successful as only a few of the flaps—prepared according to the Wolfe Krause technic—healed in place The rest of the defect was covered with Thiersch flaps from the thighs, five different sittings being required for this Thiersch flap transplantation The illustrations show an apparently normal bald head as the final outcome

Deutsche medizinische Wochenschrift, Berlin and Leipsic

83 (XXXIII, No 22, pp 873 912) *Action of Sodium Anilin Arsenate on Syphilis (Wirkung des Atoxyls auf die Syph) P Uhlenhuth, E Hoffmann and K Roscher
84 Giemsa Staining of Pale Spirochete in Section Specimens (Färbung der Sp pall im Schnittpräparat nach Giemsa) G Schmorl
85 Reflex or Disuse as Cause of Atrophy of Muscles (Muskel atrophie) P Sudeck
86 Bilateral Neuritis of Crural Nerve with Pentosuria (Neuritis des N cruralis bei Pentosurie) Cassirer and Bamberger
87 *Accidents with Murphy Button (Anwendung des Murphy knopfes am Dickdarm) K Vogel
88 *To Learn Technic of Symphysiotomy or Pubiotomy (Wie soll man die Technik der Symph oder Hebosteotomie lernen ?) H Sellheim
89 Cure of Gonorrheal Affection of Lachrymal Sac by Intercurrent Erysipelas (Tränensackblennorrhoe, etc.) H Feilchenfeld
90 External Eye Affections in relation to Nasal Affections (Aeussere Augenerkrankungen in ihrer Beziehung zu Nasenleiden) Commenced in No 21 A Gutmann

83 **Action of Sodium Anilin-Arsenate in Syphilis.**—The experiments and clinical experience related indicate, Uhlenhuth and his coworkers assert, that this drug, given in sufficiently large doses, has an unmistakable action on the manifestations of syphilis, especially striking in the malignant forms The drug does not influence the movements of the spirochetes in the test tube, even in a 1 per cent solution, but it seemed to banish the spirochetes from the blood completely in an infant with inherited syphilis while no influence was apparent in another case of the kind Six of the eleven syphilitics treated systematically with the drug exhibited symptoms of intoxication loss of appetite and sleeplessness, accompanying severe colic like pains or diarrhea, while one of the patients exhibited albuminuria with casts and blood corpuscles in the urine The return of these symptoms after resumption of the drug established its causal relation See also abstract No 50, page 527

87 **To Avoid Mishaps with the Murphy Button**—Vogel describes two cases in which the button was used after resection of a cancer in the sigmoid flexure In each case the lumen became obstructed with a hard scybalum with resulting perforation of the bowel above He warns against the use of the button at points where such hard masses are liable to be encountered

88 **How to Learn Technic of Symphysiotomy and Pubiotomy**—Sellheim advises practicing the pelvis enlarging operations on the sheep as the conditions approximate those in the human very closely He prefers to operate just before the mother sheep has been hit on the head to benumb it before it

is slaughtered He places the animal on a table in a position approximating conditions in the clinic and then performs the operation, the legs of the animal held by assistants The various technics proposed can thus be practiced and compared, and conditions afterward examined as the animal is slaughtered The findings are remarkably instructive, especially as it is a little more difficult to perform the operation on the sheep than on the human subject The findings also show that the injury to the soft parts is more considerable than one would suppose from the accounts in the literature They also reveal the dangers and means of avoiding injury of the bladder, urethra and peritoneum

Deutsche Zeitschrift f Chirurgie, Leipsic

91 (LXXXVI Nos 2-4 pp 117 390) Dislocation in calcaneo scaphoid Articulation (Luxation im Talonaviculargelenke) B. Morian
92 Dislocation of Foot below Astragalus and Fractures of Latter 2 Cases. (Luxatio pedis sub talo) Luxembourg
93 Isolated Subcutaneous Fractures of Certain Carpal Bones (Frakt. einzelner Handwurzelknochen) M Hirsch
94 *Catgut fresh from the Slaughtered Animal Treated with Iodin or Silver before being twisted (Katgut steril vom Schlachttier, etc.) F Kuhn and M Rössler (Kassel)
95 Dislocation of Foot below Astragalus Mechanism Reduction (Luxatio pedis sub talo) Reismann
96 Inherited Congenital Anomaly of Finger Bones (Anomalie des Fingerskelettes) B Bauer
97 Incarceration of Mesentery of Small Intestine in Crevice in Great *Omentum* (Einklemmung von Dünndarmgekrose) H Lorenz.
98 Fractures of Metacarpal Bones (Frakt der Metacarpalknochen) E Boerner
99 *Resection of Chest Wall with Plastic Operation on Exposed Lung (Plastik auf die freigelegte Lunge) F Sauerbruch
100 Experimental Study of Spiral Fractures (Spiralfrakt.) F Kroh
101 *Lymphangiectasia (Lymphangiektasie) P Albrecht
102 Echinococcus in the Neck (Echin am Halse) J P Haberern.
103 Sarcoma of Female Breast. (Sarkom der weibl Brust) J Finsterer
104 Fragmented Sesamoid Bones of Big Toe (Teilung der Sesambeine) Momburg

94 **Fresh Catgut Impregnated with Iodin or Silver Before Twisting**—Kuhn and Rössler devote nearly six pages to the bibliography of mishaps with catgut, and review all the methods of *preparation*, showing their defects Many methods of preparing catgut give tolerably fair results but none is absolutely reliable. They *think* that this is because the catgut gets so thoroughly impregnated with germs during its manufacture that the subsequent sterilization is unable to dislodge or to destroy them entirely The sterilization should be done, they think, before the catgut is submitted to the final processes of manufacture, and they describe the method of preparation in use in their service which they believe gives results never before attained The method is illustrated The intestine is removed from the slaughtered animal by a *person* trained in asepsis, and is kept free from contamination while it is first cleansed, rinsed again and again, and sent to them in an antiseptic fluid They believe that the intestine of a healthy herbivorous animal may be regarded as free from very virulent germs, tetanus, anthrax and virulent pyogenic cocci It acquires them *and filth* when the gut is thrown on the floor of the slaughter house, as is the general custom When the intestine is received it is transferred with every precaution of asepsis to a rectangular glass pan The end of the intestine is then drawn over a little horizontal plate of ivory in front of which stands a perpendicular knife The intestine is then pulled along over this plate, the knife slitting it in two, and each half falling and coiling in a separate glass pan on each side of the standard on which the knife is mounted The slit halves are then manipulated to render them transparent and pliable by passing *them* over rollers at each end of a box in which several combs are mounted, alternately with the teeth up or down By turning a crank at each end in turn the catgut is wound from one roller on the other and back again Every step of the process is aseptic After the catgut has the desired aspect it is disinfected and then impregnated thoroughly with iodin or silver, when it is ready to be twisted, and disinfected again before using Ordinary catgut is twisted first and then disinfected They agree with Paterno that silver fluorid possesses the most powerful disinfecting properties while it has certain advantages over other silver salts This communication is to be followed by a report on the properties of catgut thus prepared, its absorption, strength and freedom from irritating properties

99 **Resection of Chest Wall with Plastic Operation on Exposed Lung**—This operation was rendered possible by the use of the compressed air cabinet The large defect left after removal of an adherent mammary cancer was repaired by twisting the sound breast over the defect and suturing it directly to the lung below No *tamponing* was required in the two cases described and illustrated

101 **Lymphangectasia**—Albrecht relates a case in which chyle was apparently secreted from the swollen lymphatics on the thigh Some of them ruptured In structure they resembled a cavernous lymphangioma Operative treatment is of no use in such cases, he asserts, although symptomatic measures are indicated The trouble is evidently a congenital malformation in the lymphatic apparatus, the condition being aggravated by secondary inflammation In the tropical form the filaria induces the inflammation without the necessity for a congenital predisposition

Münchener medizinische Wochenschrift

105 (LIV, No 21, pp 1017 1064) *Reduction of Puerperal Mortality (Zunehmende Kindbettsterblichkeit) O v Herff
106 *Present Status of the Streptococcus Question in Obstetrics (Streptokokken Frage) W Zangemeister
107 Transference of Experimental Syphilis of Rabbit Eye to another Rabbit (Augensyphilis des Kaninchens) E Tomasczewski
108 *Clinical Test for Alexin (Alexinprobe) F Moro
109 When to Operate for Myoma (Myom) Weisswange
110 *Dorsal Reflex (Dorsaler Fussrückenreflex) Lissmann
111 *Use of Fluid Rubber to Protect Field of Operation (Operationen unter Gaudaninhautschutz nach Döderlein) A Littauer
112 Multiple Neurotic Cutaneous Gangrene in its Relations to Hypnosis (Hautgangrän) L v Szöllösy
113 Hysteric Fever during Pregnancy and Pains Simulating Labor (Seltenere Störungen der Schwangerschaft) Krummacher
114 Varicella assuming form of Pemphigus Neonatorum (Pemph neonat non syphiliticus) Kaupe.
115 Steel Ribbon Spring for Flat Foot Insoles (Stahlbandfeder für Plattfusseinlagen) K Lengfellner
116 *Present Status of Percussion of Heart (Lehre von der Perk des Herzens) Commenced in No 20 G Treupel

105 **Increasing Puerperal Mortality**—O von Herff writes from Basle to comment on the increasing puerperal morbidity and mortality He attributes it to defective disinfection of the hands and to overzeal in examining and operating He commends Ahlfeld's technic of hot water alcohol disinfection as simple and sure, and urges that the obstetric trauma should be reduced to the minimum with strict avoidance of every intervention not actually indispensable There is no necessity for training students in the refinements of gynecologic rarities he adds, what they need is to be able to deliver the ordinary run of cases such as they will encounter in every day practice

106 **Present Status of Streptococcus Serum Treatment**—Zangemeister considers the subject *mainly* from the standpoint of obstetrics, his conclusion being that, to date, antistreptococcus serum has not proved reliable in the clinic for inducing either active or passive immunity He thinks, however, that it is only a question of time when effective antistreptococcus sera will be produced which *can* be depended on for passive immunization and treatment

108 **Test for Alexins**—Moro uses for his test 0 1 c c of a 10 per cent suspension of washed red corpuscles, from sheep, in physiologic salt solution To this is added 0 05 c c of a 10 per cent solution of sheep blood immune serum and 0 045 c c of human blood With normal human blood the sheep red corpuscles are entirely or nearly entirely dissolved in the course of two hours of incubation In case the human blood is lacking in alexins more or less of the corpuscles escape destruction and the proportion which thus escapes is the index of the proportion of alexin in the human blood The corpuscles that have resisted hemolysis are dissolved in 0 1 c c of decinormal hydrochloric acid The tint of the resulting fluid is then compared with that of the standard solution The findings harmonized with those of other tests in 200 examinations made by *him* at Pfaundler's clinic

110 **Dorsal Reflex.**—Mendel and Bechterew have called attention to an organic reflex in affections of the central motor system with increased nervous excitability The latter styles it the "tarsophalangeal reflex." When the side of the dorsal surface of the foot, over the cuboid and external cuneiform bones, is lightly tapped with the hammer, the second to the

fifth toes or the second and third alone turn up toward the back of the foot Lissmann reports that this occurred in 900 tests on healthy persons, without a single exception The same was observed also in 41 patients in various stages of tabes in 2 cases of paralysis agitans and in 8 of sciatica On the other hand, no reflex contraction followed in the cases of spastic infantile paralysis, while a reverse flexion, a pathologic reflex contraction—the toes contracting toward the plantar surface of the foot—was observed in nearly every case of a nervous affection in which the Babinski sign was positive Plantar flexion was never observed in cases with negative Babinski In infants the plantar reflex was also observed so long as the Babinski sign was positive In 10 out of 12 infants with negative Babinski sign the flexion of the toes was dorsal and dubious in the others These findings suggest that the sign is connected with the pyramidal tracts, and it is thus liable to prove useful in the diagnosis of nervous affections of central origin

111 **Rubber Film to Protect Field of Operation** —Doderlein reported a short time ago that he had succeeded in effectually protecting the field of operation by applying a solution of rubber in benzine and formaldehyd It dries rapidly and forms an impervious coating over the field of operation The skin is first disinfected as usual and then painted with tincture of iodin as soon as this has dried the rubber solution is applied (Doderlein's communication on the subject was summarized in THE JOURNAL, xlviii, page 911, 1907) Littauer has used the rubber solution in sixty laparotomies and has been much pleased with the results Convalescence seemed to be hastened and shortened

116 **Present Status of Percussion of Heart** —Treupel thinks that extremely accurate information can be obtained in regard to the heart by combining the various methods of percussion Ewald Goldscheider's threshold percussion (SP) Moritz's moderate percussion (MP), and touch percussion (Tasperkussion—TP) He gives the findings in 150 cases, tabulating also the orthodiagram, the maximal distance of the right margin of the heart from the median line (Mr), the maximal distance of the left margin of the heart from the median line (Ml), and the length of the heart, from the cava auricle corner to the apex He urges others to use these abbreviations for comparison of findings

Virchow's Archiv, Berlin

Last indexed page 95

117 (CLXXXVIII No 2 pp 181 394) Parathyroid Glands Aberrant Cells therefrom included in Thyroid Gland and Remains of Postbranchial Body (Glandula parath etc) S Getzowa

118 Case of Retroperitoneal Hernia (Hernia retroperit Treitzii) H Schoppler

119 Study of Histomechanic Development of Skeleton and Interstitial Bone Growth (Synostosis suturæ sagittalis cranii) R Thoma

120 Tumors of Pituitary Body and that Region (Geschwülste der Hypophysis und Gegend) L Bregman and J Steinhaus

Gazzetta degli Ospedali, Milan

Last indexed page 95

121 (XXVIII Nos 21 27 pp 209 288) Influenza Bacillus in Blood and Spleen in Influenza (Bacillo di Pfeiffer) G Chedini

122 *Epidemiologic Study of Typhoid (Epidemia tifoide di abitazioni) A Galluzzi

123 Study of the Blood in the Insane (Ricerche ematologiche sugli alienati) G M Fratini

124 *Mosquito Traps (Mezzo di distruzione delle zanzare malariche) F Bosurgi

125 Spinal Anesthesia (Anestesia del midollo spinale) O Marchesini

126 *Steam Sterilization in Country Practice (Sterilizzazione a vapore compresso) A De Cortes

127 *Syphilis transmitted to the Third Generation (Eredo eredo sifilide) I Imparati

128 *Instrumental Dilatation in 3 Cases of Placenta Prævia (Metodo Bossi) I Guasoni

129 *Typhoid Bacillus in Blood during Convalescence (Presenza del bac di Eberth nel sangue) C Gennari

130 *Autosiphonage in Lavage of the Stomach (Nuovo metodo di gastrolisi) L della Valle

122 **Epidemiologic Study of Typhoid** —Galluzzi relates that sixty barrels of manure and garbage from a town were dumped from a train on a tract of land in the country from 180 to 300 feet to the windward of four farms sheltering thirty persons The water supply of this group of farms was mainly from a spring in a hill on the other side and could not have been contaminated from the garbage dumped on the low ground near the river In less than two weeks twenty out of the thirty persons on the farms developed symptoms of typhoid Galluzzi ascribes the infection to typhoid germs in the manure dump liberated possibly by the gases of putrefaction, favored by the extremely hot weather, and transported to the farms by the strong winds prevailing at the time

124 **Mosquito Traps** —Bosurgi applies the principle of sticky fly paper to the destruction of malaria bearing mosquitoes A kind of screen or trellis work about 6 feet by 4 5 feet, is smeared thick with heavy crude oil, which is sticky enough to catch and hold mosquitoes They can be attracted to the screens by hanging a small lantern in the center It is not necessary to put the screens out of doors until toward night They should be raised about 4 5 feet from the ground, as a rule, but they can be placed on the ground close to the edge of waters where mosquitoes are breeding The deodorized crude oil is not expensive and answers every purpose, as it takes a long time to dry

126 **Steam Sterilization in Rural Districts** —De Cortes advises a small portable steam sterilizer such as are used by specialists and shows how it can be adapted for the sterilization of everything the physician or surgeon may need in country practice

127 **The Second Generation of Inherited Syphilis** —Imparati reviews 22 cases on record in which syphilis reappeared in the grandchildren in a virulent form There is no evidence of sterility in the families with inherited syphilis, as many as 15 pregnancies are recorded in some Jullien has reported an average of 2 75 pregnancies in 93 families and Fournier 3 16 in 116 families, but only about 50 per cent of the children survived the first year after birth, and only a very small number were free from signs of syphilis The stigmata seem to be about the same for both the first and the second generation of inherited syphilis

128 **Instrumental Dilatation in Case of Placenta Prævia** —Guasoni reports three cases in which the advantages of rapid instrumental dilatation were conclusively shown There was no laceration in any case, although craniotomy was required on account of hydrocephalus in one case

129 **Typhoid Bacilli in Blood in Convalescence from Typhoid** —Gennari states that with Conradi's ox bile method he was able to detect typhoid bacilli in the blood in 8 cases, even one and two weeks after all fever had subsided

130 **Autosiphonage in Lavage of Stomach** —Della Valle introduces the stomach sound and pours through it the fluid for lavage The patient then changes his position until every part of the stomach has been thoroughly rinsed with the fluid He is then told to draw a deep breath and then, holding the tube tightly closed between his lips, to make a profound expiration This starts a siphonage action in the tube and the entire contents of the stomach are thus expelled

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Books Received

WARUM KOMMEN DIE KINDER in der Schule nicht vorwärts? Zwei Vorträge vor der Schulkommission des Aerztlichen Vereins in München von Dr Albert Uffenheimer Privatdozent für Kinderheilkunde in München und Dr Otto Stählin Professor am Kgl Maxgymnasium in München Paper Pp 59 Price 1 4 mk Munich Verlag der Aerztlichen Rundschau (Otto Gmelin) 1907

A DICTIONARY OF MEDICAL DIAGNOSIS A Treatise on the Signs and Symptoms Observed in Diseased Conditions For the use of Medical Practitioners and Students By Henry L McKisack, M D etc Physician to the Royal Victoria Hospital Belfast Cloth Pp 583 Price, $3 50 New York William Wood & Co, 1907

RATIONAL AND EFFECTIVE TREATMENT OF HIP DISEASE By P B Bennie, M A M D, etc. President Melbourne Medical Association 1896 Founded on Experience of Numerous Cases in Hospital Practice During 28 Years Compiled by A B Bennie M A M B, etc Cloth Pp 108 New York William Wood & Co, 1907

THE ESSENTIAL SIMILARITY of Innocent and Malignant Tumors A Study of Tumor Growth By Charles W Cathcart M A M B etc., Surgeon Royal Infirmary, Edinburgh Illustrated Cloth Pp 78 Price $2 50 New York William Wood & Co 1907

COOK COUNTY HOSPITAL REPORTS 1906 Compiled and Edited under the direction of the Publication Committee of the Cook County Hospital Attending Staff Cloth Pp 304 Chicago The Henry O Shepard Co 1906

SEVENTH ANNUAL REPORT of the Eye Ear Nose and Throat Hospital of New Orleans La Jan 1 1906 to Dec 31 1906 Paper Pp 71 New Orleans A W Hyatt Stat y Mfg Co 1907

TREATMENT By Harry Campbell M D B S etc, Physician to the Northwest London Hospital Cloth Pp 421 Price $3 00 New York William Wood & Co, 1907

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Addresses

THE RELATION OF THE HOSPITAL TO MEDICAL EDUCATION AND RESEARCH *

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BALTIMORE.

The most urgent need of the medical schools of this country at the present time is the possession of well organized and well equipped hospitals, available for teaching, and I esteem it a great privilege to bring greetings and congratulations to the Jefferson Medical College on this splendid addition to its educational resources Coming, as so many of us do, directly from the meeting of the American Medical Association in Atlantic City, my colleagues, representing the medical profession of this country, will surely be glad to have me express on this happy occasion in their behalf congratulations to this college and to this city We must all rejoice in the enlarged opportunities for bedside teaching supplied by this fine hospital to the Jefferson Medical College, which from its foundation over eighty years ago has laid especial emphasis on clinical instruction, which has sent forth so many graduates who have achieved professional success and eminence, and which has possessed such distinguished teachers and ornaments of our profession as McClellan Eberle, Dunglison, Bache, Drake, Meigs, J K Mitchell Dickson Pancoast, Mutter, the Grosses, Brinton Da Costa; whose worthy, living successors will not deem it invidious if I add to this incomplete list the name of that leader of American surgery, their absent colleague, Keen, who, resting from his many years of brilliant and successful work in behalf of this college, will in a distant land be glad with us to-day

The Jefferson Medical College is indeed singularly fortunate in the possession of this large general hospital, admirable in construction and arrangement, entirely under the administration of a single board of trustees common to the college and the hospital, who control all of the appointments to the hospital staff and who in serving the best interests of the patients are in the fullest sympathy with the needs of medical education and active in its promotion It is precisely the lack of hospitals under the control of our medical schools which constitutes one of the most serious obstacles in the development of medical education in this country and all interested in the advancement of medical science and teaching in America have reason to be grateful to the State of Pennsylvania and the private benefactors whose enlightened generosity has made possible this enviable possession of the Jefferson Medical College

The theme of my remarks on this occasion—the relation of the hospital to medical education and medical research—is naturally suggested by the event which we are assembled to celebrate.

The discussion of the problems of clinical teaching and investigation by one engaged in laboratory work, although actively interested in all that pertains to the advancement of medical education, may have the advantage, so useful to a speaker, of a certain detachment of view, of length, if not clearness of perspective, and of the absence of too disturbing a consciousness of all the difficulties inherent in the working out of details

It would be interesting to trace the evolution of methods of clinical instruction from their inception or rather revival, in Padua by Montanus about the middle of the sixteenth century to the present time We should follow the conveyance of these methods by the elder van Heurne toward the end of the sixteenth century from Padua to Leyden, where in the course of a century they reached the high development attained under the great Boerhaave, *communis Europæ preceptor,* and whence influences, spreading in the eighteenth century first to Gottingen, Halle, Vienna, and Edinburgh, can be traced continuously down to this very day and to the medical schools of America But such a historical survey, hitherto imperfectly drawn, is a theme by itself, which I must forego, although commending it as an attractive one to medical historians

While the early history of medical education in this country is a story of feeble resources, but still of high endeavor and of just appreciation of the requirements of training for a learned profession, we can not contemplate with similar satisfaction and pride the deplorable period which followed through many years of lowered standards of preliminary education, of shortened courses, and of faulty arrangement of the curriculum Nevertheless, these unfortunate conditions attributable mainly to the circumstances of rapid, pioneer development of the country and to the absence of any responsible supervision outside of the medical schools, were saved from giving results as bad as they are often depicted and as the system seemed to demand by a measure of practical, clinical instruction, by the high character and gifts of many of the teachers, and by the preservation of sound traditions of the physician's calling

Nothing is more remarkable in the history of medical education in this country than the rapidity with which our better schools have emerged in the last two decades from this low state Especially noteworthy during this period is the development in these schools of laboratory teaching from the weakest to the strongest position in the curriculum, with the corresponding and most gratifying growth in this country of the sciences of anatomy, physiology, pathology, biologic chemistry, pharmacology and bacteriology Hygiene, unfortunately, has lagged behind, mainly, I believe, through lack of careers for trained hygienists in this country, especially on our boards of health.

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* Address at the opening of the new Jefferson Medical College Hospital June 7 1907

The introduction and development of laboratory teaching has had a profound influence on our ideas of methods of medical education. In the laboratory knowledge is acquired not by reading or being told about things or even by seeing them demonstrated by another but by immediate contact with the object of study, by power to use technical instruments and procedures and by personal observation and experiment. A final adjustment has not yet been reached between this practical method of acquiring knowledge and the older didactic or expository method, to which within proper restraints I am not unfriendly, but the days of dominance of didactic teaching in our medical schools are numbered.

A pertinent inquiry in this connection is whether improvement in the teaching of medicine and surgery has kept pace with that of the laboratory subjects. Improvement in the former there has been, but it is, nevertheless, true that the so-called theoretical subjects are to-day taught most practically and the so-called practical branches most theoretically. It is above all familiarity with the methods and results of teaching in the laboratory which has emphasized this contrast and has indicated directions of improvement. Such contrasts, however, as those implied in the distinctions so commonly drawn between theoretical or scientific subjects on the one hand and practical subjects on the other in the medical curriculum, and between the methods of teaching in the laboratory and those of teaching in the hospital are unfortunate and not inherent in the nature of the subjects. Both classes of subjects are practical in that they admit of application to practical use and in that their common aim is to serve the training of practitioners, and both are scientific in that they rest on and are furthered by co-ordinated knowledge gained by systematic observation, experiment and reasoning. The justification for the presence of any obligatory subject in the medical curriculum and for the amount of time devoted to it is its importance for the training of sound practitioners of medicine and surgery. Nor should there be any difference in the general principles underlying the methods of teaching the laboratory subjects and those of teaching the clinical branches. For the latter the hospital is the laboratory where the results of Nature's experiments are to be studied and alleviated by the methods of science.

Training in the laboratories in the early years of the medical course should be a preparation for the final work in the hospital where the ultimate goal of medical education is approached—the ability to interpret and to forecast and the power to prevent, to remove or to relieve the manifestations of disease and injury. Important as clinical teaching must have been even in the relatively undeveloped state of medicine and surgery in past centuries, it is vastly more important in these days of accumulated medical knowledge and experience of refined methods of diagnosis by physical examination and by a multitude of technical procedures and of improved methods of medical and surgical treatment.

Do the methods of teaching the clinical subjects generally adopted in our medical schools at the present time bring the student sufficiently into that intimate prolonged personal contact with the object of study, in this case the living patient, which secures that abiding, vital useful knowledge, the possession of which alone is power for good, and the lack of which is helplessness and even power for harm? As I have intimated, I believe that the clinic falls behind the laboratory in this regard, and that the greatest strength of the curriculum is not where it should lie.

It is not many years since practically the sole method of clinical teaching in the medical schools of this country was the amphitheater clinic. Not a word need be said against the value of this important form of clinical instruction, but no argument is needed to show that by itself it does not suffice for the practical training of students in the science and art of medicine.

A distinct advance was marked by the introduction in recent years of the system of ward classes, by which students in groups are admitted to the hospital wards and given opportunities to examine patients and to receive personal instruction. It is not necessary for my present purpose to discuss the various forms of these ward classes or the methods of conducting them, or similar classes for practical, clinical instruction, or to point out in detail their great value to the student, which is universally recognized.

Neither the amphitheater clinic nor the ward class meeting under an instructor at stated hours and for short periods of time, useful as they are, represents the full ideal of the laboratory method of teaching. They correspond rather to demonstrative courses, which have their own place and value. Such courses alone would represent the attempt to teach a subject like bacteriology by demonstrations of methods, cultures and microscopic slides instead of having the student make his own media, plant and cultivate the bacteria by his own hands, and follow and study from day to day with his own eyes the characters of the growing organisms. It is only by the latter method that bacteriologists are made and it is only by a similar method that capable practitioners of medicine and surgery can be made, and if this essential training is not at least begun in the undergraduate days in the medical school, it must be secured if at all, later, often under disadvantageous circumstances and at great cost both to patient and to physician.

This kind of clinical training means practical work in the dispensary and especially that students in their final year of study have patients assigned to them in the public wards of the hospital, where under proper restrictions they can freely come and go, that they take histories, make necessary examinations for diagnosis follow the course of disease from day to day and become familiar with methods and results of treatment, all of this work being, of course, under competent supervision and undertaken only after suitable preliminary studies. Privileges and opportunities for practical training of the kind indicated are at present enjoyed in most of our hospitals only by the fortunate internes, but the system is familiar in Great Britain as that of clinical clerks and surgical dressers, and in Germany as that of *Praktikanten,* hospital service in this capacity being a requirement in these countries for admission to examinations for the license to practice. The system has been in successful operation at the Johns Hopkins Hospital since the opening of the medical school.

It should be emphasized that the system, unlike that of ward classes constitutes a part of the regular, orderly machinery of the hospital, that the students do work important for the the interests of the patient and which if not done by them, would have to be done by others. How important this kind of clinical training is deemed by that country which has long held the leadership of medical science is indicated by the recent addition in Germany to the formerly required period of study of the so-called practical year of continuous service in a hospital before the student is eligible for the license to practice

I believe that it is incumbent on our medical schools and public hospitals to furnish students with opportunities for the kind of clinical training which I have briefly sketched and have indicated as comparable to the laboratory method of teaching Let us briefly consider what objections can be urged against this method of clinical training and what obstacles stand in the way of its general adoption in this country

The difficulties are not to be sought primarily in the lack of desire or willingness on the part of medical schools to advance along these lines of improved clinical teaching It may be that the advantages of the newer methods are not so widely and fully appreciated as is to be desired, but the leaders and especially the younger generation of clinical teachers are alive to the importance of reform

The difficulties and objections come from that other essential arm of medical education—the hospitals Under the prevailing system of medical education in this country the most valuable asset of a medical school is the possession of an endowed, good general hospital, the appointments to which are controlled by the school and a main purpose of which is to serve the interests of medical education, while serving the best interests of the patients There are few hospitals which stand in this relation to a medical school and of these still fewer capable of furnishing the requisite clinical opportunities, for it is self-evident that the system of ward-work which I have outlined is practicable only when the ratio between the number of patients and the number of students does not fall below certain limits

Most of our schools must look to outside public hospitals to aid them in this most important part of the training of medical students, and the appeal of the schools and the students, an appeal which should be supported by the entire medical profession, is one which should receive the most careful consideration from the trustees of these hospitals The source of the appeal should be heeded Our medical charities could not exist without the free gift of their services by physicians, and the mere pecuniary value of these services, amounting annually to many millions of dollars, exceeds that of all the funds contributed to their endowment The welfare of the community is vitally concerned with the supply of well trained physicians, never so much so as to day when the power to relieve suffering and to check the incalculable waste to society from preventable disease has been greatly increased and is constantly growing If the public wants good doctors it must help to make them

A hospital which includes, as most public hospitals do, among its recognized legitimate functions not only the care of the poor sick, but also the training of physicians and nurses and the advancement and dissemination of medical knowledge adds no function which is new in principle when it admits advanced undergraduate students to work in its wards, while by so doing it greatly increases its usefulness and service to the community, and I believe also to the patients There is no very material difference between the qualifications of these advanced students to undertake this work and the qualifications of internes when first admitted to the hospital staff The introduction of these students into the hospital in accordance with the plan of ward work recommended interferes in no way with the orderly discipline and quiet of the wards

The objection concerning which the greatest misapprehension exists and which doubtless weighs heaviest in the minds of managers of hospitals and of the lay public, unfamiliar with the actual facts, is the fear that harm will be done to the patients by permitting them to be examined by students The primary purpose of the hospital is, of course, the care and treatment of the patients and the first duty of hospital trustees and physicians is to the patient Nothing which prejudices the welfare of the patient can for a moment be permitted, and if it were true that the kind of clinical training which I am advocating inflicted any injury whatever on the patient, no other considerations could outweigh this objection

The objection, however, is entirely unfounded Every one acquainted with the conditions knows that our clinical teachers and the attending physicians and surgeons of hospitals are keenly solicitous for all that conduces to the comfort of their patients and makes for their recovery, every whit as much so for the poor as for the rich They can be safely trusted to take every precaution to guard patients from harm and to imbue their students from the start with the same spirit of anxious solicitude for the welfare of the patients A main purpose of the kind of clinical training under consideration is precisely to teach students when and how to examine patients, and I am informed by my clinical colleagues that students are, if anything, overcautious in their anxiety to refrain from any possibly injurious disturbance of the patient and that they carefully observe any directions which may be given regarding patients Your own Dr Keen in his admirable presidential address to the Congress of American Physicians and Surgeons on "The Duties and Responsibilities of the Trustees of Public Medical Institutions" expressed himself on this point of possible harm to the patient from bedside instruction in these forcible words

> I speak after an experience of nearly forty years as a surgeon to a half dozen hospitals and can confidently say that I have never known a single patient injured or his chances of recovery lessened by such teaching

So far from being detrimental, the teaching of physicians and students is distinctly advantageous to a hospital and its patients The teaching hospital is in general more influential, more widely useful and more productive in contributions to medical knowledge than a hospital not concerned with teaching Such a hospital is more attractive to physicians and surgeons of distinction and, therefore, more likely to be able to attach such men to its attending staff, and thereby secure the best medical service The stimulating influence of eager, alert students on the clinical teachers in hospitals has been so delightfully depicted by Dr Keen in the address just cited, and which should be widely read by trustees and physicians, that I can not refrain from quoting his remarks on this point in full He says

> Moreover trustees may overlook one important advantage of a teaching hospital Who will be least slovenly and careless in his duties, he who prescribes in the solitude of the sick chamber and operates with two or three assistants only, or he whose every movement is eagerly watched by hundreds of eyes, alert to detect every false step, the omission of an important clinical laboratory investigation, the neglect of the careful examination of the back as well as of the front of the chest, the failure to detect any important physical sign or

> symptom? Who will be most certain to keep up with the progress of medical science, he who works alone with no one to discover his ignorance, or he who is surrounded by a lot of bright young fellows who have read the last *Lancet* or the newest *Annals of Surgery*, and can trip him up if he is not abreast of the times? I always feel at the Jefferson Hospital as if I were on the run with a pack of lively dogs at my heels. I can not afford to have the youngsters familiar with operations, means of investigation or newer methods of treatment of which I am ignorant. I must perforce study, read, catalogue and remember, or give place to others who will. Students are the best whip and spur I know.

There is no teacher who will not subscribe to these words of Dr. Keen.

It should furthermore be emphasized that the efficiency of the teaching hospital in its main function of treating diseased and injured patients is increased not only by securing the most skilful medical staff, by the constant stimulus of their interest and activity and by the spirit pervading the institution, but also by the participation of advanced students in the work of the dispensary and the wards in accordance with the system of clinical training which I am urging on your attention. When one considers all the time-consuming microscopic, chemical and physical tests applied in modern diagnosis and necessary to secure complete records of cases of disease, it can be readily understood that the increased force of those trained to make these examinations conduces to more accurate diagnosis, and to more satisfactory control of the progress of the patient from day to day, and therefore to better treatment. In advocating improved methods of clinical training and the introduction of such training more generally into public hospitals I plead and plead earnestly for the student, but I plead also for the hospital and the patient.

It is really lamentable to contemplate the immense clinical material which exists in the public hospitals of our large cities and which could be made available for the education of students and physicians and for the advancement of medical knowledge, but which is utilized for these purposes either not at all or very inadequately. Medical schools of these cities do not begin to secure the advantages of location which rightfully belong to them and they allow themselves to be outstripped by schools less favorably situated and the hospitals themselves are less useful than would otherwise be the case.

I am well aware of the practical difficulties in establishing the necessary relations with hospitals not already connected with medical schools. These difficulties, however, are not insurmountable if the trustees, teachers and medical staff sincerely desire their removal. The new order doubtless involves readjustment of existing conditions both in the schools and in the hospitals concerned. In many instances there will follow a considerable increase of the force of clinical teachers and a wider recognition of work done outside of the college walls and of the immediate direction of members of the faculty, a recognition it may be, of something on the order of the Scottish extramural teaching or of the German privat-docent system, but adapted to our own special conditions. Careers will be opened to hospital physicians and surgeons especially to young men, ready and fitted to teach but who now find the doors closed to them.

My remarks thus far have related mainly to the needs of undergraduate medical students and to methods of undergraduate clinical teaching. Education at best is only begun in the school and the most the medical school can hope to do is to send its graduates forth fitted to begin their professional work and to continue their lifelong education with the greatest advantage to themselves and to others. I have on another occasion discussed the serious lack of opportunities in this country for the training of young men who aim at the higher careers in clinical medicine and surgery, and I contrasted these opportunities with similar ones now open in our laboratories for those who desire to become teachers, investigators or directors of laboratories of anatomy, physiology, pathology or other medical science. Training for the higher clinical careers requires a long apprenticeship after graduation from a medical school and after the ordinary hospital internship and is best secured by prolonged service in a hospital as resident physician or surgeon under conditions which secure more thorough practical experience and better opportunities for scientific study and investigation than those which now exist under the customary arrangement of the medical staff of our hospitals. I shall not now occupy time by renewed consideration of this aspect of my subject further than to state my belief that the reorganization of the resident and interne medical staff of the hospital indicated for this higher training of graduates of medicine is also that best adapted, if not essential, for the successful operation of the system of ward work for undergraduates which I have sketched and for the highest efficiency of the hospital.

A teaching hospital, such as the new Jefferson Medical College Hospital, will not be content solely with making the best possible provision for the treatment of injury and disease and for imparting knowledge; it will recognize as one of its most important functions also the increase of knowledge. Although I am approaching the end of the time allotted to this address, I can not pass this subject by without reference, albeit necessarily a hurried one.

For purposes of accurate diagnosis and treatment by modern methods a general hospital must nowadays be supplied with no small equipment for clinical laboratory examinations, and a good pathologic laboratory is now generally recognized as essential to such a hospital even in its routine work. Practical courses in the clinical laboratories are among the most valuable additions of recent years to the medical curriculum.

The problems of disease presented by living patients are the most difficult and complex in the whole range of the physical and natural sciences. Much light can be shed on them by investigations conducted in physiologic, chemical, pathologic, pharmacologic and bacteriologic laboratories, especially by experimentation on animals, but it is increasingly clear that the scientific study of many of these problems can be undertaken with the greatest advantage in well-equipped, special laboratories connected with the hospital clinics and in charge of investigators trained in chemical, physical and biologic methods, with convenient access to the material for study and in close touch with the clinicians. I may cite as good examples of such laboratories those of the university clinic in Munich under the direction of Professor Friedrich Müller.

The familiar analytical and statistical study of cases of disease, based on simple clinical observations, and first extensively and fruitfully applied by the great French clinicians of the early part of the last century, has been of immense service to medicine and will continue to be of service. A good clinical observation has precisely the same scientific value as a fact demonstrated in the laboratory, and, even if more difficult of interpretation, is often the safer guide for the action of the physician.

It is, however, from the special clinical laboratories that we may reasonably hope for a more penetrating insight into the causes and nature of many diseases, an insight which perhaps may arm physicians with a saving power of prevention and treatment of some of the organic diseases of advancing life comparable to the inestimable gifts of bacteriologic laboratories to the prevention and treatment of infectious diseases. We must welcome the establishment of such laboratories and the new directions which they are giving to medical research. When the purposes of such laboratories are made clear, their foundation and support should make an especially strong appeal to public and private philanthropy.

The medical laboratories of whatever kind and the clinics, while each must cultivate its own special field, are fundamentally one domain, one in their scientific methods and spirit and one in their common purpose to advance medical knowledge and thereby bring healing to the nations.

In this great domain and with this high mission may the Jefferson Medical College and Hospital, with their past of honorable achievement and their future of larger opportunities, grow and prosper, serving skilfully the sick under their care and blessed with wise counselors, with able and devoted teachers and contributors to medical science and art, with zealous students from far and near and with loyal graduates—an institution standing in this community and throughout the land as a powerful influence for all that is best in our profession!

THE OLD JEFFERSON HOSPITAL*

J. CHALMERS DA COSTA, M.D.
Professor of Surgery and Clinical Surgery in the Jefferson Medical College
PHILADELPHIA

We meet to-day to dignify with appropriate ceremonies an event of the first importance in the history of this school—an event long hoped for, long despaired of, but which has finally come to pass. The dream of a multitude of yesterdays is realized to-day, and this splendid new hospital is a monument, not to public vanity, not private gain but to unselfish effort for humanity and science. Those who tracked the toilsome pathway, those who bore the heavy burden, may well be pardoned a feeling of exultation and a sense of triumph.

My first and most agreeable duty is to turn to the Hon. William Potter and his associates of the board of trustees, and, in the name of the great alumni of this school and of my colleagues of the faculty, tender our heartfelt and most grateful thanks.

This event is of the first importance to the Jefferson Medical College but its influence is of far wider significance. It is of importance to medical science that a corps of the army of healing, a corps in the front of the battle against Death, has been strengthened and enthused. It is of economic importance to the city and the state. When a man is saved from death or rescued from sickness he returns to the support of a family which might otherwise be a public charge and he becomes again an industrial unit, a factor in the production of wealth, a factor which adds its share to the power and greatness of the commonwealth. From the economic view alone to say nothing of the humane aspect, it actually pays the state to aid hospitals financially. It particularly pays it to aid teaching hospitals, in which the lessons learned from a single sick or injured man may save valuable lives and cure hundreds in distant places. The event is also of importance to the diseased and hurt of the state and city, for more of them than formerly can come to us for help. The need of hospital accommodation is every year becoming more and more pressing. This is an age when dangerous occupations multiply. The streets are filled with rapidly-moving and death-dealing vehicles, every few stories of a great modern building mean one man dead and many injured, every twenty miles of railroad in the country mean a man killed, and every three miles mean a man injured, each year, great machine shops and factories crush and mutilate, and deadly electric currents are on all sides of us. Closely adjacent to the hospital are the slums, the inhabitants of which, when injured or diseased, know no resource but the hospital, the people of the slums pour into the wards and throng in the out-patient departments. The very situation of the building means a wealth of clinical material because it is placed where it is most needed. In the slums the slime of humanity gathers, there plagues are ever lurking, ready to burst forth and overwhelm us, there is drunkenness, there is madness, there is pauperism, there is illegitimacy, there is "Vice with her naked talons," there is "Crime with her dripping fangs." Truly the slum is the shadow of civilization itself and in that shadow crawls every noisome reptile and springs every noxious plant. The slum is the interrogation to civilization, it is the problem that excites the anxious and apprehensive interest of the scientist, the philanthropist, the statesman and the philosopher, it is the Sphinx's riddle and to fail to answer it means destruction.

We depart from the old hospital and truly it is time we did, yet even in going to better quarters there is reminiscent regret at leaving the old home. We leave much besides a building that has outlived its highest usefulness. We leave memories of good work done, of progress inaugurated, of great men and of high achievements. In the arena of that building voices have spoken in tones so authoritative as to sound through this hemisphere and to echo beyond the sea, and the spirits of absent or departed great ones seem to stand beside me as I speak.

In that arena the Grosses and the elder Pancoast operated, and Bartholow and J. M. Da Costa taught. There spoke Levis, Parvin, Wallace, Biddle, Brinton, Maury and others. There, as guests have stood Esmarch, of Kiel, Mikulicz, of Breslau, Faure, of Paris, Lorenz, of Vienna, Bryant, Durham, Horsley, Ballance and MacCormac, of London, Macewen, of Glasgow, Lawson Tait, of Birmingham, Annandale and Chien, of Edinburgh, Emmett, Weir and Thomas of New York, Senn, of Chicago, our own Marion-Sims, and a host of others. There, until yesterday, one fortunately still living was a tower of strength. I refer to our distinguished Emeritus Professor of Surgery, my well loved master, Keen. I find in these memories strength and inspiration, and I will hold them and cherish them as long as memory remains a portion of my intellect, and until my body becomes again a part of the dreamless dust.

Thirty years ago, in May, 1877, the hospital that we now leave was opened for patients. Our college was, I believe, the second institution in the country to have its own hospital for teaching purposes When opened it was modern, well equipped, amply satisfactory, an ornament to the city and the pride of the school In only thirty years it has become completely antiquated, so quickly do conditions change Thirty years! A comparatively short time, if measured merely by the figures on the calendar, but an infinite period if estimated by multitudinous and revolutionary changes Thirty years ago vivid chromos, the product of lithography, were immensely popular, they have entirely given place to really beautiful Christmas and New Year cards Typesetters and compositors were not being pushed aside then by composing machines Men wrote letters by laborious effort with pen and ink and did not have typewriters The newspapers did not publish pictures and the pictures in the magazines were wood cuts, not halftones In the entire country there were only four establishments for making artificial ice, there are now over eight hundred The preservation of food by canning was just beginning to become a great industry Numbers of persons were reading Jules Verne's recently-published book, "Twenty Thousand Leagues under the Sea," but navigation under the water was then but a poet's dream, it is now realized in the submarine boat The United States Navy was almost extinct, thanks to some of the ablest political engineers of destruction that ever wrought evil deeds The Philippine Islands were known to but few in this country, and then only in connection with hemp and peculiar-looking cigars, and the man did not live that could forecast the message of progress that Dewey was to write in iron hail on the battlements of Manila, and out of which was to spring that new island empire in the very portals of the distant sunset The United States Army numbered but twenty thousand men, some of whom were being used to carry elections in the southern states, and some of whom, under General Miles, were fighting Chief Joseph and his Nez Percés in Northern Montana The small-caliber, long-range rifle and smokeless powder were unknown—the combination that has revolutionized warfare, made cavalry an almost insignificant arm of the service in actual battle and rendered the taking of fortified places by assault almost impossible to any except the "little brown men" of the land of the Mikado The largest locomotive in general use weighed thirty-five tons, the latest type of freight engine built by the Baldwin Locomotive Works weighs over one hundred and fifty-two tons Express trains, as a rule, ran at a rate of thirty miles an hour, they now run more than fifty, and often over sixty miles an hour for long distances The largest ocean steamboat was under five hundred feet in length, the Baltic of the present day, is seven hundred and twenty-six feet in length The record passage across the Atlantic was over seven days, it is now under five days, seven hours There was not a building in Philadelphia above eight stories in height, there are buildings now in the city twenty-three stories high Yellow brick and terra cotta were seldom used in building, steel and cement were never employed, and our present Babylonian towers with ribs of steel would have seemed to the people of that day as marvelous as Aladdin's palace There were no hansom cabs on the streets The bicycle with the huge front wheel was just appearing, and twenty years were to pass before the advent of the automobile Hand organs were of small size, and there were no huge breweries of din pushed about in carts or drawn around by dejected donkeys The street cars were dragged slowly by bony and wretched horses The public squares were enclosed with iron railings The streets were paved with Belgian blocks and cobblestones The wizard, Edison, was at Menlo Park, deep in perfecting the incandescent electric light and in inventing the phonograph Our streets were illuminated by flickering gas jets The telephone had been exhibited the previous year at the Centennial Exhibition and was regarded as a marvel, but a toy, few guessed that it would soon become a necessity of life—a perplexing and harassing necessity, breeding wrath and bad language Marconi had not yet beckoned the mystic symbol out of the fogs of the North Atlantic across eighteen hundred miles of lonely sea Unjustifiable and maddening street noises were less common than now, the trolley with flat wheels, the huge hand organ, the riveting machine and other sin-breeding infamies were not, every minute of the twenty-four hours, producing profanity, insomnia and neurasthenia Color photography, safety matches, the underground railroad, the elevated railroad, the steel trust, benevolent assimilation and the big stick were unknown The country was just recovering from the fierce electoral struggle between Tilden and Hayes, and there was no such thing as an eastern question known to the policy of the United States

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*Address at the opening of the new Jefferson Medical College Hospital, June 7, 1907.

A man could be graduated in medicine after two years of study, only the crudest preliminary education was required, the college professors divided the fees and made enormous incomes by it, and most medical schools were private institutions run for private gain just as truly as groceries and tobacco shops There was not a genuine trained nurse in any hospital in Philadelphia Surgery was narrow and limited compared to what it is to-day it consisted chiefly in ligating for aneurism, performing tracheotomy, amputation and resection, operating for empyema, strangulated hernia, bone disease and stone in the bladder, reducing dislocations, setting and dressing fractures, trephining for head injuries, caring for wounds, removing foreign bodies and extirpating tumors A few surgeons—notably the Atlees—were doing ovariotomy Comparatively few operations were done, and most ignorant persons were afraid of hospitals, would go to one only in the last extremity, and then went in deadly terror of the black bottle and the fatal potion

Year by year there has been a growing confidence in hospitals During the year ending Sept 30, 1880, there were 890 in-patients treated in the hospital During the year ending June 1, 1906, there were 6,118 treated —nearly seven times as many—with the same accommodations During the year ending Sept 30, 1880 483 new patients were recorded in the Surgical Out-Patient Department, and these included genitourinary and orthopedic cases Last year there were 4,043 new cases excluding genitourinary and orthopedic cases During the year ending Sept 30, 1880, only 267 operations were done, including general, orthopedic, ophthalmic and genitourinary surgery, as well as gynecology During one day a short time ago twenty operations were done—nearly 10 per cent of the number performed in an entire year twenty-seven years ago In other words, at the present time as many operations are performed in two weeks as were done in a year in 1880

In 1877 the great wave of surgical progress, which is one of the most notable events of a notable age, was beginning to form a moving billow Appendicitis was unknown and was to remain so until Reginald Fitz, of Boston, published his epoch-making paper in 1886 Melier had guessed the truth in 1827, but he was suppressed by authority, and thousands died because Dupuytren wrong was believed and Mellier right was doubted In 1877 drugs producing local anesthesia had not been discovered Bodies for dissection were difficult to obtain and great abuses sometimes arose in attempting to obtain them The essential importance of embryology in solving many problems of deviation and of disease was beginning to be appreciated Pathology, chemistry, physiology were becoming fruitful of marvels

It was just dawning on teachers that students must not only see and hear but must also do, and that, as anatomy is learned in the dissecting-room, many other branches must be learned in the laboratory We have had the dissecting-room—that is, the laboratory of anatomy—for centuries, we now must have laboratories for at least a dozen other subjects A few progressive and able men had grasped the full importance of the recent discoveries of Pasteur, had realized that infectious diseases were probably due to bacteria, and that preventive medicine was destined to become one of the highest callings to which man could devote his brain and consecrate his life Prof John K Mitchell, with the intuition of the poet, had claimed, away back in the forties, that fungi caused infectious diseases, but he was unable to prove it The evidence of the existence and power of minute fungi was furnished by Pasteur but the germs of suppuration were not discovered by Ogston until 1881, and the bacilli of tubercle were not discovered by Koch until 1882

One reason that operations have become notably more frequent since 1877 is found in a great discovery made but a few years before that time In 1876 a modest, unassuming Scotch surgeon attended the International Medical Congress in Philadelphia, and from that visit dates the beginning of a radical change and an enormous advance in surgery That surgeon, a few years before, had made a study of the views of Pasteur and had come to the conclusion that microscopic fungi were responsible for many unfavorable changes in wounds, and he sought to prevent the entrance of bacteria into wounds by what he called antisepsis The profession was slow to believe In 1877 only two surgeons in Philadelphia employed antisepsis These surgeons were W W Keen and J Ewing Mears

Antisepsis has wrought marvels as mighty as were ever conjured by the seal of Solomon It really made possible most of the surgery of the brain, the chest, the abdomen and the abdominal viscera It has practically abolished the so-called blood poisoning as a sequel of surgical operations, it has enormously mitigated post-operative pain and fever, it has lessened the mortality of major amputations from over 50 per cent to under 5 per cent, of compound fractures of the long bones from over 50 per cent to under 1 per cent, of ovaritomy from at least 50 per cent to about 5 per cent Truly the life of Lord Lister has been a greater boon to the human race than the lives of a hundred military heroes or a score of kings I would be prouder to be Lord Lister than to be any potentate that lives and reigns

For fifty-two years Jefferson College was without a regular hospital During these years many notable things were done, in spite of cramped quarters, inadequate means and makeshift appliances This indicates that able and enthusiastic men can often obtain great results with very imperfect instruments Fine buildings and ample equipments are of great value, but men are of even greater value It has been well said that the laboratory in which the *x*-rays were discovered contained little but a Crookes tube, a Ruhmkorff coil and Roentgen himself Back of every appliance must stand a man able and anxious to use it to the best advantage Sound college policy seeks to obtain able men as well as costly buildings, and to develop teachers, operators, writers and experimenters, as well as to found laboratories Let us not be so "charmed with the shell" that we "cast away the pearl"!

Although until 1877 we had no building especially devoted to hospital purposes, we had a sort of hospital from the very beginning, and dispensary patients were cared for and operations were regularly performed before the class in our original college building That building, the precursor of our present college and hospital, was our home for three years and still stands It is 518 and 520 Locust street It is an old building From the side driveway iron tiebeams are visible in the walls It is three stories in height The front door and windows are arched, and access to the interior is obtained by mounting several well-worn stone steps The front, except for the sign of a business firm, is practically as it was eighty-two years ago Around it are many modern structures and also some houses that stood in 1825 It was built for a cotton factory, then became the Winter Tivoli Theater, then the Jefferson Medical College and is now a bottling establishment In 1825 Locust street was called Prune Directly opposite the college was the Walnut Street Prison for criminals and debtors one of the rules of which was that the yard must be "kept free from cows, hogs, dogs and fowls" On the east the college looked out directly on the burial ground of the Free Quakers, those apostles of peace whose combative instincts had grown so strong that they had fought under Washington in the War of the Revolution and had been expelled from meeting for doing so To the west, across Sixth street, was the potter's field now Washington Square Directly back of the college was an ale house, and a block or two away were several churches Crime and misery in front, death on either hand, and manifold consolations in the rear!

Every teacher wore a swallowtail coat, even in the daytime, and drove a chaise If a student were hungry he could go forth into Fifth street and purchase hot corn or pepper-pot from colored venders in the street If he felt convivial his wants could be satisfied in the Goose and Gridiron or in the Robinson Crusoe If he wished to see a play he chose between the Olympic Theater, at Ninth and Walnut streets, and the Chestnut Street Theater, on Chestnut street above Sixth If he wished to read he went to the Philadelphia Library on Fifth street above Walnut If the thirst for combat filled his youthful veins he wandered up to Ninth and Chestnut streets, where he was sure to be promptly accommodated by a university man

The Philadelphia Dispensary, Christ Church, St Peter's Church and the Pennsylvania Hospital were where they stand to-day The law courts were at Fifth and Chestnut streets The mayor's office was at Sixth and Chestnut streets The United States Bank, which was a political institution and a national issue, was in the building that is now the Custom House The almshouse was between Tenth and Eleventh, Spruce and Pine streets

There were no policemen, only watchmen, who were also lamplighters, and a favorite nocturnal amusement was beating the watch At this time revolutionary traditions were still active and influential, and many men were living who had crossed the Delaware with Washington, had wintered at Valley Forge, had known Benjamin Franklin, and had gone out in the streets to cheer and build bonfires when Colonel Tilghman rode in with the news from Yorktown.

The year of our opening was the year Lafayette completed his final tour in America, that John Quincy Adams became president, that Henry Clay assumed the office of secretary of state, that Oliver Wendell Holmes went up to Harvard, that Poe prepared for the University of Virginia, that Washington Irving started for Spain, that Longfellow celebrated his eighteenth birthday, that Fitz-Green Halleck traveled in Europe, that Hawthorne was graduated from Bowdoin, that Daniel Webster cast aside his free trade views and that Andrew Jackson really became the St. Andrew of Democratic adoration.

In that old building of the Jefferson College the elder Gross studied as a pupil of McClellan, the professor of surgery, Washington L. Atlee was a student, Nathan R. Smith taught anatomy, John Eberle taught practice of medicine and W. C. P. Barton taught materia medica. In it George McClellan invented teaching by public clinics and the first operation was performed in it May 9, 1825.

Teaching from actual cases in collegiate clinics, a plan invented by McClellan and first applied in the school he founded, came to be the greatest strength of the institution. Teaching by college clinics was long opposed by many conservatives. It was held by them to be misleading, ineffectual and superficial, but, nevertheless, after much controversy, it came to be adopted as the most prominent feature of the curriculum by the famous faculty of '41, the faculty that contained Pancoast, Dunglison, John K. Mitchell, Huston, Bache, Mutter and Charles D. Meigs—a group that was unbroken until 1856. But we learn as we advance. "The thoughts of men are widened with the process of the suns." The large clinics have played an infinitely valuable part in medical teaching, but the days when they could constitute the sole method of clinical instruction have forever passed away. Accurate and intimate knowledge can be obtained only by close observation, and close observation is possible only to small sections, and the students now personally examine cases, assist in operations and give anesthetics—of course, guided and controlled by a teacher.

A new building was erected in 1828, and the last lecture was delivered in the original college building in March, 1828. The new building was on Tenth street above Walnut. This building was twice enlarged and was finally succeeded by the present structure on the corner of Tenth and Walnut streets. The ground once occupied by the college is covered by the new hospital. Up to the year 1844 patients on whom serious operations had been performed were taken to their homes in carriages and were cared for at home by the professor of surgery and his assistants. In 1844 two rooms were rented over a store at the southwest corner of Tenth and Sansom streets and a miniature surgical hospital was established. Dec. 23, 1846, a patient in this little hospital was operated on by Mutter for tumor of the cheek and ether was given to him—the first time an anesthetic was used in Philadelphia. In 1850 two floors were rented over a bottling establishment, which stood next door to the college, and were fitted up for a hospital. In 1852 these rooms were opened directly into the college. Fifteen patients could be accommodated. On clinic days a patient was carried into the arena of the upper lecture room of the college, the room in which the professor of anatomy taught and the room that is shown in Eakins's famous oil painting of Professor Gross operating, which now hangs in the college. The operation was performed and then the patient was carried back to the little hospital. The meals for the patients were cooked by the family below. These rooms constituted the hospital until 1877, and were the hospital of Mutter, the elder Pancoast and the elder Gross. There was no resident physician in this hospital, the clinical assistants took turns in acting as residents.

My late colleague and old teacher Dr. Brinton, in his address on The Faculty of 1841, says:

> Hard worked, these latter were, too. For my part, I can remember many a night of waking and bedside watching within those narrow, cramped and musty walls. I have sat, since then, at many a well ordered table, but never have I relished dainties as I did then the savory oyster and steaming midnight cup of coffee, served by the order of a crafty faculty to insure the watchfulness of the fagged out watcher.

The school and its hospital had, from the start, a surgical bent. A surgeon created it. It was born of genius, for McClellan was its founder. He was not a Philadelphian, but came here and made his fame. His ancestry was distinguished and the blood of fighting Highlanders and Revolutionary patriots ran hot in his veins. He was born in Woodstock, Conn., in 1796. He was graduated from Yale in 1815. During his boyhood he was called "Little Mac," but he could not have dreamed that a son of his, another "Little Mac," was to come to the command of great armies, to direct titanic battles, to stand on the flaming brow of Malvern Hill, and to ride between the lines at Antietam.

Dr. McClellan studied medicine at the University of Pennsylvania, was an office student of Dorsey, and was graduated in 1819. During his student days he was a resident student in the almshouse (they then had resident students instead of resident physicians). He became almost immediately successful in practice. All his interest was for surgery, and shortly after his graduation he couched for cataract, extracted the lens for the same disease and did many formidable operations. He organized a private class in anatomy and surgery and started a dispensary for the instruction of its members. This class and this dispensary were the germs of our school and hospital. The class became extremely large, numbering 180 men. McClellan knew and loved his subjects and taught them with captivating vim and enthusiasm. By the time he was 25 years of age he was regarded as one of the inevitable men of the future.

He removed the lower jaw for sarcoma, he devised a method to extirpate the parotid gland, he amputated the entire upper extremity, he advocated tearing out certain tumors, instead of dissecting them loose in order to limit hemorrhage. He was anxious to teach, and, a place in the existing institution being denied him, he founded a new school, and took to it 150 men of his private class. He was energetic, intrepid, rapid in movement, quick in comprehension, positive in conclusion, emphatic in utterance, enthusiastic in everything he undertook. He had a wonderfully retentive memory, a steady hand, and a quick eye. He fought for what he believed to be right, but always in the open, and he never lurked in a dark alley and stabbed the passer by with innuendo or calumny. He was in the thick of all controversies, sure of the justice of his contentions and inspired by the fire of his genius. If an enemy was in the open, he attacked him, if a foe was in disguise, he unmasked him, if something was needed at Harrisburg he rode there and got it done—all the time lecturing, operating, practicing writing, arguing in a perfect fury of amazing and keenly directed energy—an eccentric, lovable, brilliant, formidable and redoubtable man! Troubles came in the faculty, led by small and narrow men Efforts were made to control, to direct, to suppress the professor of surgery, but the lash of official coercion struck unfelt on the stout shoulders of George McClellan He resigned his professorship We lost the name from the school, we were without it for sixty-eight years, but it has, I am proud to say, been restored to us again in the person of the founder's grandson, my distinguished colleague, the professor of applied anatomy We have done the founder scant justice in the past, and it is with a feeling of peculiar retrospective affection that the least of all his successors pays this tardy tribute to his name

I wish that time permitted me to speak of some of his successors—of Joseph Pancoast, one of the greatest operating surgeons of his time, a man so celebrated that Sir William Ferguson, then the head of English surgery, referred to him the daughter of Lord Chancellor Lyndhurst for a plastic operation, Pancoast, the dexterous, the dramatic, with a hand as steady as a rock but as light as a floating perfume, with a heart that was a stranger to fear, and with an eye as quick as a flashing sunbeam

Of Mutter, he of the musical voice and charming personality Mutter, the debonaire the eloquent, the enthusiastic the beloved of the class, the man that brought to America the views of the great French school of Velpeau, Dupuytien Roux and Lisfranc, who developed in America plastic surgery and orthopedic surgery, then recently founded by Dieffenbach and Stromeyer, Mutter, who had wished the institution to build a hospital in 1841, but was defeated by the stupidity against which Richter tells us even the Gods fight in vain

Of Samuel D Gross, the greatest of them all with whose life and services we are all familiar, Gross who had fought his way to greatness from humble beginnings, who was graduated from our school in the class of '28, who founded surgical pathology in America, and who came to the foremost position ever occupied by a surgeon in this country, Gross, the author, the operator, the scholar, the teacher, the organizer, the scientist—LL D of Cambridge and Edinburgh, D C L of Oxford, the founder of the American Surgical Association, the emperor of surgery in the United States, beloved and respected by all medical men Whenever I had the privilege of listening to him I felt that fifty years of American surgery were speaking through his lips

I would like to dwell on the younger Gross—brilliant, positive emphatic, a teacher of wonderful force, a diagnostician of marvelous power, a determined, impressive and most courageous man—the man that, first of all in America, insisted on the necessity for radical operations in cancer cases We stood by the corpse of a dead lion when we went to the tomb of the younger Gross!

I would I could speak of Brinton, so lately gone out into the great beyond, my former teacher and late colleague, my father's friend and mine, the trained military surgeon, one of the founders of the Army Medical Museum and one of the originators of the "Medical and Surgical History of the War of the Rebellion" And Keen, the master of us all fortunately living still and kept from being with us to day only by the interposition of the ocean—Keen, whose name is written broad and clear on most of the pages of surgical progress during the last twenty-five years McClellan, Pancoast, Mutter, S D Gross, S W Gross, Brinton and Keen were the seven men that controlled surgery in Jefferson College for eighty-two years

They obtained triumphs and made mistakes, but their triumphs were many and their mistakes were few Let us learn from both We have had a great instrument for good placed in our hands, let us see to it that it is used to the best advantage Let us be earnest and energetic, let us have the highest ideals, let us strive for unity of action and harmony of thought, let us suppress as a venomous reptile any one who would breed contention, conflict and hate, and, above all let us have enthusiasm

Enthusiasm is the motive-force of progress No really great deed was ever done in arts or arms, in literature or science, that was not the product of enthusiasm It took Cook to the southern seas, it lured Gama around the Cape, it called De Haven to seek for Franklin in the awful solitude of the frozen North, and it beckoned Columbus across the ocean, from Palos to the Indies Because of it the explorer tracks the dusky cañon and the miner "bleeds the veins" of the mountains, the navigator seeks the northern pole, and the student prints on his face the unobliterable lines of thought It carved the Belvidere Apollo and it painted the Sistine Madonna It struck fire from cold flint, it gave the wheel to the wagon, it invented the alphabet and it saw in the steam wreaths from a tea kettle a force greater than that of all the men in the world united It reared the pyramids, it built St Peter's, it bridged the Hudson, and it laid the gleaming rails of civilization on the summits of the mighty Rockies It took signals under the ocean, it carried messages through the air, it stored up speech in reservoirs, and it harnessed the lightning to drag the vehicles of man It discovered the circulation, it invented the ligature, it introduced vaccination and anesthesia, and it laid the gentle hand of healing on the wounds of humanity through antiseptic surgery

We note its presence in the aphorisms of Hippocrates, in the orations of Demosthenes, in the demonstrations of Newton, and in the discourses of Pasteur It was with Alexander in the field as he conquered the world, it was with Plato in the grove as he founded philosophy It was by the lonely lamp of Celsus and behind the sightless eyes of Galileo It was on the battlefield with Paré and with Larrey and in the laboratory with Welch and with Leidy It was in the hospital with Sydenham and Boerhaave, with Agnew and Samuel David Gross It filled the lion heart of Abernethy, and it stirred the lordly soul of Hunter It stimulated the labors of Washington and Cromwell, of Shakespeare and of Franklin, and it lit the councils of Cesar and of Lincoln, of the great Napoleon and of England's "Grand Old Man" May we feel it, may we realize it, may we be animated by this immortal principle, may we be driven by this divine fire! If we are, we shall take our college through higher aims to broader destinies, and make of her what she ought to be the morning star among all the institutions of the land

"I hold t truth, with him who sings
To one clear harp in divers tones,
That men may rise on stepping stones
Of their dead selves to higher things"

Comparative Value of Physicians—One physician of scientific method is worth more to a community than twenty who are guessing and groping—President Faunce, of Brown University

Original Articles

THE PREPARATION OF THE SPECIALIST,

A PROBLEM IN MEDICAL EDUCATION

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The rapid development of the medical specialties has been one of the most conspicuous features of modern medical progress It has been only a few years since the work in rhinology, for example, has been carried beyond the scope of the man doing general practice The beginnings of laryngology antedate those of rhinology by but a few years, and the man who discovered the use of the laryngeal mirror passed away only last year The men whose work laid the foundations for modern otology are, many of them, still living

The short period that has elapsed since the work in the several special fields was begun is in no way commensurate with the extent to which this work has been carried There has developed in this short time for each of the specialties an enormous literature In the fundamental sciences alone, in anatomy, in physiology, in embryology and in pathology there has been accumulated for each specialty a great store of facts To become acquainted with these established facts in any special field the student has before him a work that will require years of painstaking study The specialist who would understand the real problems in his particular field, who would be able to read intelligently the advanced work that is now being done, must first know what has already been accomplished To gain this knowledge is no easy task When we realize that comparatively few of the men actually engaged in the practice of a specialty have an adequate appreciation of the facts that have been established in their own field we need not be surprised to learn that men engaged in different lines of medicine often fail to understand or to appreciate the work of the specialist These men are sometimes inclined to look on such work as trivial when compared with the problems with which they have to deal Occasionally even we hear of a practitioner who seems to believe that all there is to laryngology is the ability to use the laryngeal mirror, that the chief work in the training of the otologist is to learn to use the ear speculum, and that the rhinologist is merely one who is familiar with the use of the nasal speculum

In spite of the rapid development of the specialties and the lack of adequate time for a proper appreciation of this work to reach the men engaged in diverse fields of medicine, the actual practical results obtained by the specialist have called forth a general recognition of the tremendous gain to clinical medicine brought about through the development of the several specialties This recognition finds expression in the demand from all parts of the country for the trained specialist This is not to be interpreted in any sense as an indication of the passing of the general practitioner It is the demand for the man highly skilled in a particular field to step in when the general practitioner can go no further This demand brings to our large centers of medical education physicians from all parts of the country who see an opening for a trained specialist in their own community and who come to us to get their training What sort of preparation are we giving these men? Are we giving them what they come here for—an adequate training for practice in a special field?

Before attempting to answer this question let us first consider what should rationally constitute an adequate preparation for the physician entering the practice of a specialty An appreciation of what is implied in the term specialist in its best sense is of great importance not only to the general practitioner in determining for him what he has a right to expect of a specialist, but this appreciation is all the more important to those physicians who contemplate entering the practice of a special field Its absence may be the factor which leads them unconsciously to place themselves on the plane of the charlatan by assuming that they are specialists when they have had none of the training requisite to make them competent to do the work of the specialist

THE PREPARATION

That the specialist should have the broad training of the regular medical course goes without saying That in addition to this there is need for special preparation should be as evident as is the difference between the actual work of the internist and that of the man engaged in the practice of a specialty The general lines which this special training should follow are the same as those followed in medical schools in the training of the man for the practice of general medicine

In the first place there should be demanded a thorough special training in the fundamental sciences which training is just as essential to a clear understanding of the clinical problems of a specialty as is the general training in these sciences to an understanding of the problems in general medicine In the preparation of the student for the practice of general medicine we require a knowledge of general anatomy, general physiology, embryology and pathology There is in addition to this a special anatomy, a special physiology, embryology and pathology for each special field which clearly can not be required in the preparation of the general practitioner, but which just as clearly should form the foundation work in the preparation of the man entering on the practice of a specialty

In the preparation of the student for general practice an understanding of the general embryology of the body is considered an essential part Is there any less reason why the man entering on the practice of a special field should not be required to have a thorough knowledge of the special embryology of this field? Not the sort of knowledge that can be acquired from text-books, but the real knowledge that can be gained only from the study of a large series of actual preparations

In the training of the general practitioner a knowledge of the general physiology of the various organs is considered of fundamental importance Is there any reason why a thorough understanding of the physiology of the ear, for example, is of less importance to the otologist? An acquaintance with the mechanism of the middle ear with an understanding of the various problems in sound conductions, a knowledge of the function of the cochlea and of the problems in sound perception are just as essential to the otologist in diagnosing and treating the various disturbances of function arising from disease of these parts as is a knowledge of the functions of the liver to the internist

In the preparation of the general practitioner the study of anatomy forms an important part Is there anything peculiar in the practice of a specialty which eliminates the necessity of the specialist's making a thorough, careful, painstaking, exhaustive study of the anatomy of the part with which he has to deal? The regional anatomy of the temporal bone, for example is perhaps the most difficult to master of any part in human anatomy. A great many vitally important structures are here found crowded together in a very small space and are encased in hard bony walls which render their study by ordinary methods of dissection unsatisfactory. A thorough mastery of these relations can not form a part of the general medical or surgical training, but such a knowledge must of necessity form a part of the training of the otologist who would be prepared to operate in the region of the ear. This knowledge can not be acquired from text-books any more than it can be learned by operating on the ear, as is too often attempted. An adequate training for the otologist in the gross anatomy of the temporal bone, even of the relations having a more strictly surgical interest, can only be acquired through the careful, painstaking study of a large series of actual preparations, each made especially to bring out in a clear manner this or that relation. There is no short cut to the necessary knowledge of these anatomic details. The same close attention must be given to the study of such preparations as the medical student is accustomed to give in the study of a histologic preparation. The absolute necessity for such careful special anatomic training can be best appreciated by considering for a moment the risks taken by the physician who has failed to get this intimate knowledge when he undertakes such an apparently simple procedure as curetting the tympanic cavity. The floor of the tympanum is frequently encroached on by the bulb of the jugular, which often produces a distinct prominence in this cavity, from which it may be separated by a thin bony wall, through this thin wall a curette could be readily passed. Occasionally even this bony wall is absent and the jugular bulb is exposed in the lower part of the tympanum. Along its anterior wall the internal carotid comes in more or less close relation to the cavity of the tympanum, from which it, too, may be separated by an easily penetrated thin, bony shell. This is particularly the case near the tympanic orifice of the Eustachian tube, a region often requiring a thorough curetting. The facial nerve passes through the tympanum, lying along its inner wall, and its delicate bony covering is not infrequently wanting. Even when this bony covering is present the nerve can easily be injured by the curette when the exact location of its course is not accurately known. The dislocation of the stapes from the oval window in the process of curetting the tympanum is not infrequently the price paid for the lack of knowledge of the exact location of this structure.

Enough, perhaps, has been said to emphasize the necessity of special training for the physician who enters on the practice of a special field and to point out in a general way the scope of this training. That there should be the same careful, systematic training on the clinical side as in the fundamental sciences is, of course well recognized. It is at once apparent that such a training can not be acquired in six weeks nor in six months. To give the specialist the same sort of training in his subject which we now require of the general practitioner for his work would require at least two years in addition to the regular medical course.

THE TRAINING PROVIDED

To return now to our question, What is being done in our medical centers to provide training for the men entering on the practice of the specialties? The answer is only too well known. We are doing practically nothing in an adequate way to provide this training. The physician who comes to our medical centers for his preparation finds the only thing offered is an opportunity to attend clinics in this or that postgraduate school. In these clinics a little is heard in a desultory fashion about the symptoms, the diagnosis and the treatment of some of the more common diseases. But, for the most part, not a word is heard of the fundamental science of anatomy, of physiology, of embryology or of pathology. After a few weeks, or, at most, a couple of months' attendance on these clinics the physician, realizing that he has seen practically all there is for him to see, returns to his home town, where he puts out a sign, "Eye, Ear, Nose and Throat Specialist."

Many of these men are not even in a position where they are able to read intelligently the current literature in their subject, except the simpler clinical reports of cases, which are equally intelligible to anyone in general practice. A comprehension of the real work that is being done in their specialty is entirely beyond their reach. Physicians are scattered all over the country to-day limiting their practice to special fields, who have not had as much training for their special work as have the recent graduates from our best medical schools.

There are, of course, many exceptions where, even in the smaller towns, men are located who have realized that six months' attendance on clinics does not make a specialist and who have been willing to spend the years of hard work necessary to get an adequate preparation. These men have worked their way to a position where they have an appreciation of what is actually being done in their special field and they are prepared to do the work required of the specialist. They deserve the more credit because there has been no standard to guide them in this painstaking effort.

The development of the specialties has come about so rapidly that this demand for special training is necessarily a recent one. It presents a new problem in medical education. Recognizing, as we all must, the necessity for adequate special training for the practitioner who enters on the practice of a special field, the problem is, how shall this training be provided? That this task does not come within the scope of work that can be properly cared for in our undergraduate medical schools is, I believe, apparent. The problem of our medical schools is to provide the right sort of training for the men entering on general practice. The work of preparing men for special practice is quite distinct from this and forms no part of the preparation for general practice. Our postgraduate schools can assist in this work by providing, under the right sort of men, some of the clinical instruction which must necessarily form an important part of this preparation. Farther than this our postgraduate schools are not prepared to go. They have none of the facilities for giving the right sort of work in the special anatomy, the special physiology, etc., which as the foundation work must form a large part in the actual training of the real specialist.

THE UNIVERSITY AS A TRAINER OF SPECIALISTS

The only places in which this work can properly be done are those universities and colleges in which adequate facilities are afforded by well-equipped laboratories.

What the scope of such preparation should be we have already pointed out. In the first place there must be a thorough, detailed and, as far as possible, exhaustive study made of the special anatomy. A similar course covering the special physiology, another covering the special embryology, and still another covering the special pathology must be given. Courses covering the anatomy and pathology of several special fields are already being offered in some of our leading universities. It is but a short step to provide similar courses in each of the fundamental medical sciences. Courses in certain of the allied sciences should properly find a place in such a curriculum. In ophthalmology, for example, a course on the physics of light, and, in otology, on the physics of sound, would be of great assistance in imparting a knowledge of the problems peculiar to these specialties.

These courses should properly be placed on the basis of genuine graduate courses. That is to say, not only the established facts in each subject should be brought out, but the work should lead up to the frontier line where the actual research is being done and where the unsolved problems in the subject can be presented and discussed. The work should be so laid out that the physician who desires could work for a higher degree in medicine—the degree of doctor of philosophy, for example, in ophthalmology or in otology. The incentive which the granting of such a degree would give to the proper training of the specialist would be enormous. The offering of such a course by one or two of our best university medical schools would in itself serve to show the physicians who contemplate entering the practice of a special field that something more is expected of the properly-trained specialist than a few weeks, attendance on clinics in a postgraduate school. The superior advantages afforded by such courses would at once be appreciated by the physician who earnestly is seeking to get the best possible preparation before entering on the practice of a specialty. It is not to be expected, at least for some time to come, that all the men preparing for special fields will work for this higher degree. Well-trained men, competent to do the work required of the specialist, can be equipped without their having completed all the work required for this degree. On the other hand, the best men—those who have the ambition to make a name for themselves—will welcome this opportunity for getting the best possible preparation together with the training for original research, which is always an important part of the work required for the degree of doctor of philosophy.

A SUGGESTED COURSE

In order to make more clear what is contemplated in the work required for this higher degree in medicine, we might consider briefly some of the features to be required in a course leading to the degree of doctor of philosophy, for example, in otology. In the first place the time required to complete the work for this degree should be at least two or possibly three years in addition to the regular medical course. One whole year at least should be devoted to the fundamental sciences and at least another year under capable instructors, to the clinical side. In the fundamental sciences a major of work running through the entire year in the special anatomy of the ear would be none too much. In the special physiology of the ear a similar course should be required. The work now offered in the department of experimental psychology at our leading universities could easily be adjusted to meet all the requirements of such a course. In the special embryology of the ear the material necessary for a thorough exhaustive course can be readily prepared in any first class anatomic laboratory. In the department of physics a course dealing with the physics of sound could be easily provided. Owing to the fact that most of the advanced work in these subjects is published in French and German a reading knowledge of these languages should of course be required. In the fundamental sciences the work should lead up to a discussion of the unsolved problems in the subject. The training for actual research must be insisted on just as is done in any department where the degree of doctor of philosophy is offered. It is not of vital importance that the student have the type of mind capable of taking the initiative in original investigation. The training for such work however, under proper direction should be an important part of the work for the higher degree. The value of this training in the preparation for clinical work is inestimable; the delicacy of technic which must be mastered, the training to study a problem from every possible point of view, the training to search out and make use of the literature of a subject, the patience required to carry to its completion a piece of research, these are some of the qualities developed in the training for research that will be of the greatest value in the clinical study of cases.

By demanding in the training of the specialist courses covering the fundamental sciences of his special field, together with systematic clinical courses, we are asking of the specialist only the same kind of preparation which we have long insisted should form the preparation of the men entering general practice. By putting this special work on the basis of real graduate work and giving the opportunity to the specialist, if he so desires, of working for a higher degree in medicine, the degree of doctor of philosophy, we are but doing for the specialist in medicine what has already been done for men in the other sciences. We expect of the man who would reach the highest success in the field of physics, for example, that he devote a term of years doing graduate work in physics until he has earned the degree of doctor of philosophy.

Is it asking any more of the man whose ambition it may be to make a name for himself in a specialty like otology that he put in the same amount of time doing graduate work in his subject until he has earned the degree of doctor of philosophy in otology? Are the men in the medical specialties less willing to make this effort than the men working in the pure sciences? We do not believe that medical men are any less willing than are the men in other fields of work to make the sacrifice of time and money necessary to win the higher ultimate success, especially since the material returns are greater for the successful medical specialist than for the man in other sciences.

The opportunity of obtaining the higher degree for advanced work should not be limited to the specialties already mentioned, but, as a matter of course, should be open to all branches of medicine, including internal medicine and surgery.

To summarize briefly, the need for special training for the men entering the practice of a medical specialty is as urgent as is the training of the physician for the work of general practice. This training should be as much in the fundamental sciences of his specialty as in the clinical side. The only place where this work can be properly done is in our universities. This work should be put on the basis of genuine graduate work, leading to the granting by the university of a higher degree, the degree of doctor of philosophy in medicine. The offering of such courses, even by one or two of our best equipped universities, and the granting of this higher degree would serve to stimulate higher ideals and better preparation in the physicians all over the country entering the practice of the specialties. Finally, it is the duty of the faculties of our university medical schools to solve this problem by standardizing the work required in the preparation of the specialist. Our great need is not for more specialists, but for properly trained specialists.

THE PRESENT STATUS OF PHOTOTHERAPY *

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Since the epoch-making researches of Finsen light therapy has been accorded an established place in the treatment of disease. Finsen and his disciples have conclusively proved the value of this agent in the cure of one of the most disfiguring and distressing of cutaneous maladies—lupus vulgaris. Not every patient with lupus vulgaris can be cured by phototherapy, but this treatment produces a larger number of successes and effects better cosmetic results than any other known procedure. The best results are obtained when all of the details of treatment are carried out in accordance with the teachings of Finsen. In the light institute of Copenhagen, which city has become the mecca of lupus patients better results are obtained than elsewhere by reason of the skill of the physicians and the experience of the nurses. Treatment with the high power (50 to 80 amperes) Finsen arc lamps is not at all adapted to office use because of the size of the apparatus, the cost of the current, the duration of the individual treatments and the imperative services of a trained assistant. The same reasons militate against the successful operation of such lamps even in hospitals. In the city of Philadelphia there are not enough lupus patients to keep a large lamp going without great cost to the institutión or to the patients. We have a large lamp in one of our hospitals in Philadelphia (Fig. 1), but it is only occasionally used. I have been told that no New York hospital is now actually using the large Finsen apparatus.

Many efforts have been made to improve the construction of lamps so as to lessen the cost of operation and the duration of the exposures. With the possible exception of the Finsen-Reyn lamp, these efforts have been unsuccessful. Lamps of the Lortet-Genoud and London Hospital type (Fig. 2) and the iron electrode lamps treat a larger surface and cause more rapid reaction but are decidedly lacking in penetrative effect.

THE BASIC PRINCIPLES OF LUPUS PHOTOTHERAPY

The rationale of light treatment in lupus vulgaris is based on three main propositions. (1) The property of certain rays of the spectrum to destroy micro-organismal life. (2) Their ability to penetrate the skin. (3) Their power to produce reactive structural changes. Success in the light treatment of lupus depends, therefore, on the ability of the rays to penetrate, to kill bacteria and to inflame.

The destructive effect of light on bacteria was proved as far back as 1876 by two English workers, Downes and Blunt, in an investigation most remarkable for its accuracy of detail. The results were confirmed by the researches of Arloing of *Lyons in* 1885. Numerous investigators, including Finsen, Bang Bie, Busck, Freund, Strebel and others, have further proved the bactericidal influence of light.

Bang showed *that unconcentrated* light from a 30 ampere arc at a distance of 30 cm. will kill a surface layer of tubercle bacilli in six minutes.

The strongest bactericidal sun's rays are absorbed in the air, and thus an arc lamp has been found superior.

Dieudonné observed that bacteria were killed in half an hour by direct sunlight, in six hours by diffused daylight, in eight hours by electric arc light of 900 candle power, and in eleven hours by the electric incandescent light.

Other investigators have demonstrated that concentrated sunlight will check germ growth in one minute and kill bacteria in from five to seven minutes. Concentrated electric light checks growth of bacteria in from four to five minutes and kills in from fifteen to twenty *minutes. Arc light from metal electrodes* and the electric spark kill micro organisms in from five to forty seconds.

Von Jansen demonstrated that a piece of skin inserted between the light source and the bacteria did not prevent their death when the thickness of the skin was 1.2 mm. and the exposure one and one-fourth hours. With 1.5 mm. thickness bacteria were no longer killed. Bacteria were weakened at a distance of 4 mm. in the tissues.

Busck killed pneumococci inoculated into the cornea of rabbits with light, and Nagelschmid destroyed tubercle bacilli experimentally inoculated into the skin of a guinea-pig.

On the other hand, Klingmuller and Halberstadter[1] claim that the Finsen light *does not* kill the tubercle bacilli deep in the tissues. They exposed pieces of lupus tissue for ten minutes to the Finsen lamp and then inoculated them into the peritoneal cavity of guinea-pigs. That the bacilli were alive was evidenced by the fact that tuberculosis resulted.

It has been demonstrated that the bactericidal effect of light is largely exerted by the blue, violet and ultra-violet rays. The most scientific experiments on this point were carried out by Marshall Ward, who broke up light by passing it through a rock-crystal prism and allowed the spectrum to be cast on an inoculated solid culture medium. He found that the bacteria-killing effect began first in the transition between green and blue, and was strongest on the border between blue and violet. Especially when electric light was employed the bactericidal influence of the light extended far into the ultra-violet region. The dominant ability of the ultra-violet rays to kill bacteria, which was first demonstrated by Ward, was independently determined by Finsen three years later.

More recent studies by Bie[2] have established the important fact that the blue-violet end of the spectrum does not exclusively possess bactericidal properties. He says: "I found that with the application of a sufficiently strong light all portions of the spectrum were able to restrain the growth of bacteria or to kill them. The red rays possess the weakest power, this power then increases as one approaches the ultra-violet end of the spectrum, where it is strongest." Four per cent. of the bactericidal effect was ascribed to the red, yellow and green rays, while the blue, violet and ultra-violet rays exercised about 96 per cent. of the effect. Red, orange, yellow and green act only after long exposures Pure red requires one and one-half hours to produce a determinable effect on bacteria

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

[1] Deutsche med. Wochschr., 1905, No. 14.

[2] Die Anwendung des Lichts in Der Medizin, Wiesbaden, 1905.

Some difference of opinion exists as to the manner in which the tubercle bacilli in the skin in lupus are destroyed Finsen held that their death is due to the exclusive effect of the ultra-violet rays This view is not universally concurred in, many German workers contending that they are destroyed by changes induced in the tissues by the light Roux established the fact that light exerts an important influence on nutrient media He showed that Arloing was in error in regarding certain spores treated with light as dead, and proved that they would grow when transplanted to a fresh unexposed medium

Richardson demonstrated that the sterilization of urine by exposure to light in the presence of air is due to the formation of hydrogen peroxid Dieudonné confirmed this observation and agreed with Richardson that the ability of light to kill bacteria is due to the formation in culture media of hydrogen peroxid Kruse, who carried out the same experiments, did not regard the results as due alone to change in the media, but also to a direct action of light on the bacteria Bie admitted that hydrogen peroxid is formed in many nutrient media on exposure to light, but claimed that bacterial death is more rapid in media in which no hydrogen peroxid can possibly form

Downes and Blunt early suggested that the destruction of bacteria by illumination depended on an oxidation process and required the presence of free oxygen Bie's experiments led him to the conclusion that the destruction of the bacteria is not an oxidation process in the sense that the presence of oxygen is a necessary condition The stronger the light in the blue violet and ultra-violet rays the less does its bactericidal effect depend on the presence of oxygen and *vice versa,* the fewer the chemical rays that the light contains the less able is it to kill bacteria without the aid of oxygen

The researches of Hertel[3] are most interesting in this connection Hertel claims that the short-waved rays of light (chemical rays) cause a splitting off of oxygen from the blood and cell plasma, much in the same way as oxygen is freed from plants by light, and that this process affects both the tissues and the bacteria

PENETRATION OF THE RAYS OF SPECTRUM

It has been shown that the penetrating power of the various rays of the spectrum is in inverse proportion to their bactericidal and chemical power The red rays are the most penetrating and the ultra-violet the least

Most of the efforts in phototherapy in the past have been devoted to securing deep penetration of the chemically active rays Within the past few years the attempt has been made to increase the chemical activity of the penetrating rays In 1900 Tappeiner and Raab[4] made the important discovery that infusoria can be sensitized to the action of certain rays of light by the addition to their nutrient media of certain chemical agents

This work was confirmed by Dreyer[5] working in the Finsen Light Institute in Copenhagen Dreyer demonstrated that the addition to the nutrient medium of a small quantity of erythrosin renders bacteria sensitive to the action of the yellow and green rays of light The germs which ordinarily are not influenced or but slightly influenced are rendered sensitive much in the same manner that a bromid of silver plate is sensitized to these rays The microbes thus sensitized may be killed by the passage through moderately thick layers of skin of light from the usually employed sources owing to the increased action of the highly penetrating yellow and yellowish green rays The *Bacillus prodigiosus,* protected by a layer of skin 1 25 mm, was not killed by exposure to light for eleven hours, after being sensitized death occurred after twenty minutes exposure

Animal tissues, such as frog's tongue, rabbit's ear, human skin, etc, were also rendered sensitive to the action of the yellow and green rays

In the treatment of lupus the exposures are greatly shortened by sensitizing the tissues

Later Tappeiner and Jesionek[6] employed, before exposing to light, a 5 per cent eosin solution as a paint and also subcutaneously in the treatment of superficial epithelioma lupus, flat condylomata, tuberculous ulcer etc, with alleged good results

Lenkei[7] found that blue and yellow rays penetrated the skin and connective tissue to a depth of from 1 to 2 cm When no muscular layer was present traces of the blue rays penetrated to a depth of over 3 cm A small portion of the light penetrated to 5 or 6 cm even through the muscular layer, but this was exclusively yellow rays The red rays could not be examined because the ordinary light, sensitive substances are not changed by them, but Lenkei is certain that these last rays penetrate into the depths in larger quantities than the yellow Five per cent of the light consisted of blue rays and 80 per cent of yellow and green

Finsen and Jansen have compared the penetrating power of light from various lamps, namely, the Finsen, the Finsen-Reyn, the Lortet-Genoud and the Bang They found that the two latter are distinctly inferior to the first two lamps when deep penetration was required

It appears to me that these tests, which are based on the influence of light on silver salts, are open to error It by no means follows that the chemical effect of rays of light on photographic plates is a measure either of the bactericidal power of the rays or of their ability to produce inflammatory changes in the tissues I have found that an ordinary sixteen-candle-power incandescent lamp with a reflector will emit light which will pass through the skin, subcutaneous tissue and mucous membrane of the cheek and affect a photographic film in the mouth in thirty seconds (Fig 9)

On the other hand, a light extremely rich in chemical rays (the uviol lamp) was unable to produce any effect in five minutes

Photographic plates may be affected by the yellow and even the red rays, and these rays are the most penetrating

Busck[8] found that red, orange and yellow rays passed through his hand and affected a photographic plate in five seconds The blue, violet and ultra-violet rays from the same light source produced no effect on the plate in ten minutes This will illustrate the comparative penetrability of the various rays

HISTOLOGIC CHANGES

The histologic changes effected in the skin by the action of light have been carefully studied by a number of observers, including Moeller,[9] Sack,[10] McLeod,[11] Schmidt and Marcuse,[12] Zieler,[13] Meirowsky[14] and others

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[3] Ztschr f Allg Physiol, iv v
[4] Münch med Wochschr, 1900
[5] Derm Ztschr, 1903, x, No 6
[6] Münch med Wochschr 1903 No 47
[7] Die Durchdringungsfähigkeit der blauen und gelben Lichtstrahlen durch tierische Gewebe, von W Lenkei Almadi Orvosi Hetilap 1906 No 27
[8] Mitteilung aus Finsen's Lys Institut, iv, 1903

The findings are in general agreed on There is a pronounced dilatation of the superficial and deep cutaneous blood vessels with exudation of leucocytes Sack believes the first change to be a proliferation of the endothelial lining of the blood vessels Meirowsky, working in Unna's laboratory, states that the light stimulates the epithelial cells and leads to nuclear division After intense exposures degenerative changes in the epidermis may take place and the dead cells may be cast off through the formation of blebs

The light also causes an increase in the number of connective tissue cells and a swelling of the collagen At the height of the process the rete mucosum is thickened Unna says that light makes the skin dense and harder, in that under the influence of the light the protoplasm is reduced to keratin Moeller demonstrated the fact that light caused a hyperplasia of the epidermis and an abnormal cornification

THE INDICATIONS FOR THE USE OF PHOTOTHERAPY

The treatment of lupus vulgaris represents the dominant field of usefulness of light therapy Nevertheless, there are other diseases in which light may be employed with advantage even though it does not supplant other methods

Light would doubtless have been more used as an auxiliary therapeutic measure in many cutaneous diseases had not the suddenly established reputation of the *x* rays cast a shadow of obscurity over the milder acting agent. The ability of the *x*-rays to produce rapid and profound changes in cells and tissues constitutes at the same time the advantage and the disadvantage of that treatment. When judiciously and carefully applied in properly selected cases the *x*-rays certainly represent a wonderful addition to our therapeutic armamentarium, but improperly used they are capable of doing harm, often irremediable harm Light energy, on the other hand, while much slower and much milder in its effect, is a perfectly safe remedy Patients themselves have discovered this difference and will often permit one to use light therapy while refusing Roentgenization

The supplementary list of diseases in which phototherapy has been alleged to be of value includes lupus erythematosus, alopecia areata, acne, acne rosacea, flat vascular nevi, certain forms of eczema, leg ulcers, etc

LUPUS ERYTHEMATOSUS

In this disease, one of the most refractory of dermatoses, phototherapy may often be used with the happiest of results Finsen's first report included thirty-one cases with eleven cures and ten patients still under treatment. Since then a larger percentage of cures has been obtained by him Leredde and Pautrier mention twenty-three cases with eleven cures, many partial cures and three failures Morris and Dore treated eleven cases with great improvement in seven Hyde, Montgomery and Ormsby report a total of nineteen cases, with five cures, nine patients greatly improved, three with but slight improvement and one made worse I have had several cures in lupus erythematosus of the vascular type, it is in this particular form in which phototherapy is apt to be useful The *x*-rays are often valuable in the hypertrophic variety, whereas they are apt to aggravate the condition in the vascular type

ALOPECIA AREATA

This occupies a place among the diseases in which light therapy is indicated Finsen, Forchammer Jersild, Leredde and Pautrier, Sabouraud, Hyde, Montgomery and Ormsby, Kromayer and others have reported successes Professor Kromayer of Berlin has had such remarkable results that special reference to them is deemed valuable

Kromayer[15] uses an arc light with iron electrodes, without pressure lens, a current of from 15 to 25 amperes is employed The exposures range from one-half minute to ten minutes for each area, at a distance of from four to ten centimeters In some cases Kromayer claims that a regeneration of the hair is evident after the first exposure On the second day new hair points are at times visible At first this was not believed possible, but was confirmed by independent examinations Kromayer treated thirty-three cases of alopecia areata, which he divided into two classes The milder ones with a hair loss of less than half of the head, and the severe cases with hair loss greater than this or complete The result in the thirteen milder cases was throughout good, nearly all were completely cured In three, small bald areas were still present, in a few, relapses were noticed Of the twenty cases of the second group thirteen were total alopecia and the other seven approached total alopecia in various degrees Of these twenty patients only five were treated with negative results, only one of which was not a total alopecia, hair growth was stimulated, but the hair either ceased to grow further or fell out

Summing up his results, Kromayer claims twenty-eight successes out of thirty-five cases In the milder cases the results were all satisfactory In the severer group there were five failures among twenty cases Many of these cases had lasted for years and had been treated with all sorts of methods without results One patient, for instance, was a woman of 50 years of age whose hair loss was almost total and had dated back twenty-five years After twenty-seven treatments the hair was restored to normal condition except over the temples, where it is a little thin

Kromayer concludes that the iron light at the present time is the best and surest remedy in alopecia areata

The stimulating effect of the chemical rays of light on hair growth has been repeatedly observed in Copenhagen, where the bare arms of the nurses giving Finsen light treatment have exhibited increased pilary development

HIGH-POWER INCANDESCENT LAMPS

The much advertised high-power incandescent lamps have been viewed skeptically and not with much favor by dermatologists in general The skepticism has doubtless been based on preconceived theoretical considerations Subsequent experience may prove the lack of faith to have been well based, but in the light of newer researches as to the effectiveness of all rays of the spectrum, and as to the efficacy of heat rays, trial of such light sources by properly qualified and conservative men would be desirable It will be recalled that Bie found that with the application of sufficiently strong light all portions of the spectrum were able to restrain the growth of bacteria or to kill them

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[9] Bibliotheca Medica Part D 11
[10] Muench med Wochschr July 1902
[11] Brit. Med. Jour Oct 25 1902
[12] Arch f Derm 1903 p 323
[13] Derm. Ztschr., 1906 No 1
[14] Monats. f Prakt. Derm., April 1906 xlii
[15] Monats f Prakt Derm July 1 1905

Audry and Kiosing[16] have been enabled to heal venereal sores rapidly with heat rays Hollander claims good results in lupus and chancres with his hot air treatment Scholtz[17] believes that the heat rays in the *Finsen treatment* of lupus are by no means without effect He is of the opinion that the chemical rays are absorbed in the superficial layers of the skin and that the death of the bacilli in the deeper layers is due to the heat rays

MERCURY VAPOR LAMPS

In 1892 and 1896 Dr Leo Aarons,[18] a noted German electrician, demonstrated that a continuous electrical current passed through a vacuum tube containing a certain quantity of mercury is capable of creating an arc and of generating an intensely bright light emitted by the incandescent mercury vapor Peter Cooper Hewitt of New York improved this lamp and made it commercially practical This light contains few or no red rays and is extremely rich in blue, violet and ultra-violet rays The latter, however, are largely absorbed by the glass of the tube itself To obviate this absorption of the most chemically active rays Dr E Zchimmer, working in Schott's glass works, produced a glass (said to be a barium phosphate-chrome glass) which is pervious to the ultra-violet frequencies and which, according to Schott, permits by far the greater portion of the short waves originated in the glass tube to emerge These tubes which are made of varying lengths, must be tilted to make the arc and to start the light

The lamp made by Schott is called the "uviol" lamp, the name being a convenient contraction of the term ultra-violet Another mercury vapor lamp made of quartz with a water-cooling jacket is made by Heraus of Hamburg For several years these lamps have been in use in Germany

Axmann[19] treated with the uviol lamp thirteen cases of leg ulcer with cures after a treatment of some weeks, some of these cases had lasted years

Acute and weeping eczema, after a ten-minute treatment were alleged by him to be so far improved on the following day as to require no further treatment Acne, furunculosis and alopecia areata are also said to have been cured

Hans Meyer[20] found that the uviol light acted on photographic paper through a piece of epidermis of a thickness of 0 5 mm in three-fourths of a second at a distance of 1 5 mm (The epidermis was taken from bullous lesions)

Keller determined that the uviol light had a bactericidal influence but acts only superficially Plates exposed immediately after inoculation were affected, but later growth was not influenced

Meyer had no success in ringworm of the skin, but secured favorable results in tinea versicolor He believes that the uviol light like the iron light, constitutes a method that surpasses others in the treatment of alopecia areata

Meyer noted, as did Kromayer with the iron light, that fine hair tips begin to be visible after one treatment That the light is the exclusive factor may be determined by comparing areas treated by the light with those that are not He obtained good results in severe acne indurata The acne nodules under the influence of the hyperemia undergo *resorption*

In a case of bullous dermatitis herpetiformis Meyer obtained an apparent cure The blebs dried up in a very short time under the influence of the light erythema Excellent results were also obtained in the prurigo of Hebra

Kromayer[21] considers the following indications for the use of the mercury vapor lamp (the author employed the quartz lamp made by Heraus) Lupus and superficial epithelioma, vascular nevus, alopecia areata acne rosacea, eczema, rebellious syphilitic affections (psoriasis linguæ) and ulcers that are often refractory to ordinary general and local treatment Kromayer obtained successful and sometimes brilliant results in isolated cases rebellious to all other methods

Assfalg of Frankfurt[22] used the uviol lamp for one year He believes that it is necessary to produce a light reaction in order to obtain therapeutic results He treated three patients with alopecia areata and cured them with an average of fifteen sittings of from one-half to one hour in duration The cases had lasted for at least a year and the patients had been treated in various ways without result In several cases he saw extension of patches of alopecia areata on the border at the same time that new hair was growing in the center He believes the hair returns more quickly under uviol treatment

Acne was found to be very favorably influenced, Assfalg preferring the light treatment to the *x*-rays A case of furunculosis of the entire back and chest of four years' duration and treated with various remedies was completely cured after ten treatments of from one-half to three-fourths hour in duration There was no return within nine months Two patients with chronic seborrhoic eczema were completely cured after five and eight treatments respectively Two patients with acne rosacea were considerably improved after three treatments and are still under treatment One is cured now for six months A number of patients with chronic eczema, dry and moist, have also been cured

Two patients with varicose ulcers were treated One, the ulcer the size of a half-dollar, was healed after six irradiations, the other still under treatment, was much improved after three treatments

Gastou and Nicholas[23] report several patients treated with the Heraus quartz lamp, patients with lupus erythematosus, nodular tuberculid and glandular swelling were cured The writers prophesied a great future for the lamp

The uviol lamp has been employed in the Philadelphia Polyclinic for about a year The breaking of the lamps interrupted the treatments, and some of the patients were obliged to be treated by other therapeutic measures I have also used the uviol lamp in my office for some months I have had constructed a tilting lamp-holder on a stand to receive two short tubes run in series and so arranged that the lamps could be used horizontally or vertically (Fig 6) Above the lamps is a reflector covered with aluminum paint

With this lamp a light reaction may be produced after five minutes' exposure at 4 centimeters distance Several times after ten minutes' illumination at from 4 to 8 cm distance, I have produced an erythema with some puffing of the eyelids. The erythema largely disappears at the end of twenty-four hours. The parasiticide properties of this lamp in my experience appear to be rather feeble. Petri dish agar cultures of the *Staphylococcus aureus, Bacillus coli communis* and the *Bacillus capsulatus aerogenes* were not killed after twelve minutes' exposure at 4 cm with the Petri dish lid off. The cultures were about twenty-four hours old and it is possible that the effect of the light was insufficiently penetrating to kill the bacteria growing down into the medium.

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[16] Arch f Derm xliii

[17] Berlin klin Wochschr 1904 No 18

[18] Wiedemann s Annalen 1892 and 1896

[19] Deutsh med Wochschr 1906, p 583

[20] Einige Erfahrungen mit der Uviol Lampe Med Klinik September, 1906, p 990

[21] Deutsh med Wochschr 1906 No x

[22] Muench med Wochschr Oct 9 1906

[23] Bull Med 1905 No 57 p 668

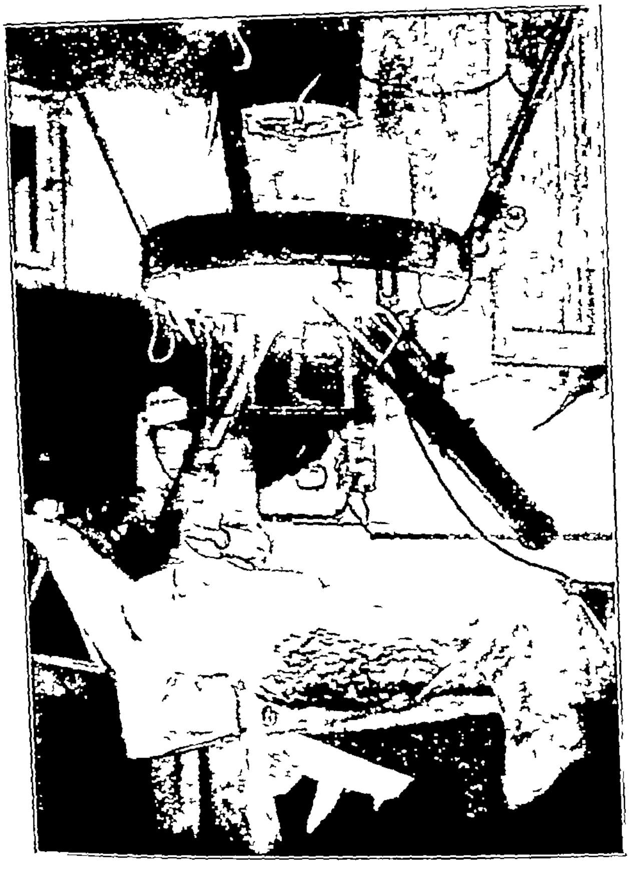

Fig. 1.—Large Finsen lamp in use at the Stetson Hospital, Philadelphia.

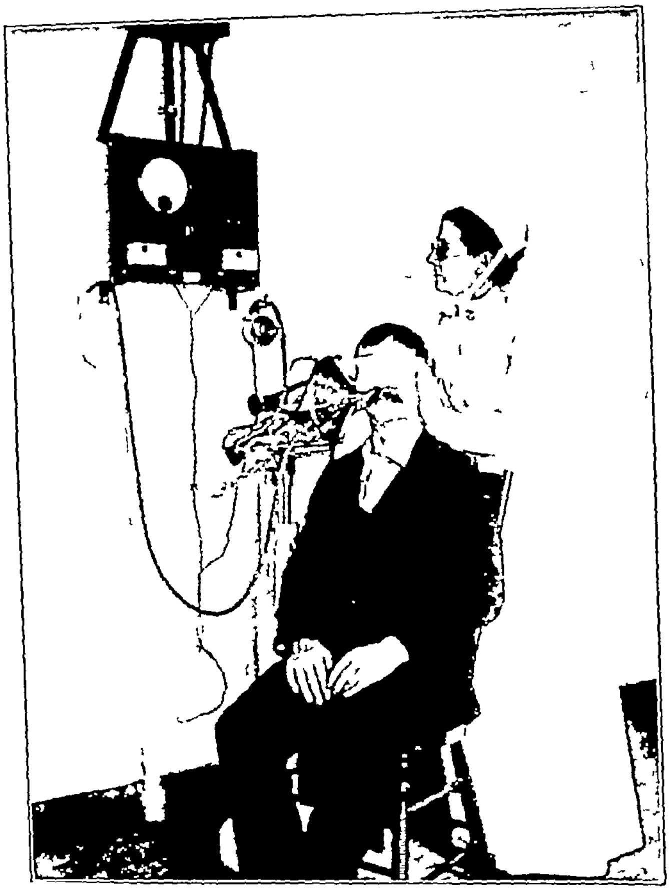

Fig. 2.—London Hospital lamp in use at the Philadelphia Polyclinic.

I have used the light in alopecia areata, acne, eczema, lupus vulgaris and leg ulcers, but in entirely too few cases to justify any definite conclusions. I will briefly narrate the results and state my impressions.

Case 1.—A. G., an Italian boy, aged 12, had an extensive alopecia of 14 months' duration. A partial regrowth at one time took place, but was followed by a subsequent loss of hair. The usual local remedies were used without much effect. About fifteen light treatments of ten minutes' duration, at a distance of from 4 to 6 inches, were given in the course of from six to eight weeks. The hair soon began to grow and is now fully restored over the entire scalp except at the nape of the neck, which received no illumination (Figs. 3 and 4). This fact strongly suggests the actual curative influence of the rays in this case.*

Case 2.—J. F., aged 12, a robust blond boy with a total alopecia of nine months' duration. The usual treatment was entirely without avail. Under uviol exposures a fine down appeared, which subsequently vanished. Fourteen treatments were given, but without any successful result.

Case 3.—M. R., aged 21, a young woman with a half dollar sized patch of alopecia in the right temporal region of two weeks duration. Three light treatments of from 15 to 20 minutes were given. There was extremely rapid restoration of hair. A stimulating antiseptic wash had been used and the cause of the unusually prompt result can not be definitely stated.

Case 4.—In connection with these cases of alopecia areata, and bearing on Kromayer's successful results, it is proper to note a failure in the case of a 12 year old girl with a total alopecia of ten years' duration. The girl was treated in the light laboratory of the Philadelphia Polyclinic with the London Hospital lamp. Thirty two twenty minute exposures were given without result. The accompanying illustration (Fig. 5) shows the light reaction in areas covered by the lens.

Case 5.—T. S., man, aged 60, with damaged heart and kidneys and arteriosclerosis, had an extensive almost universal erythematous eczema of many years' standing. There was considerable thickening and lichenification. Itching was severe. Internal and local treatment of varied character had given no relief. The itching and infiltration were distinctly lessened by the light treatment. On the breakage of the tubes, *x* ray treatment was substituted with more benefit than that derived from the light treatments. The patient is now vastly improved.

Case 6.—M. M., a girl, aged 9, with a severe papular eczema of the face, hands and arms of several years' duration. Uviol treatments of fifteen minutes' duration were given twice a week. After four treatments, the itching was markedly diminished and the eruption greatly improved. Treatment was discontinued on account of breakage of apparatus.

Several cases of acne were treated, but inasmuch as these were private patients sole reliance was not placed on the light treatment. In non-suppurative papular or nodular lesions rapid resorption is effected by ten minute light exposures. The influence of the light is much more prompt but less permanent than that of the *x*-rays.

In several leg ulcers treated granulation was markedly stimulated by a few treatments One severe case appeared to be on the road to cure, when the breakage of apparatus caused substitution of mild x-ray treatment with immediate aggravation and extension of the ulcers

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* The patient has remained well now for five months.

In this connection the observations of Strebel are pertinent

Strebel showed that ultra-violet irradiation of open wounds causes rapid granulation and skinning over He explained this by the favorable action of the ultra-violet light on the blood vessels and trophic nerves He recommended ultra-violet light in the treatment of leg ulcers

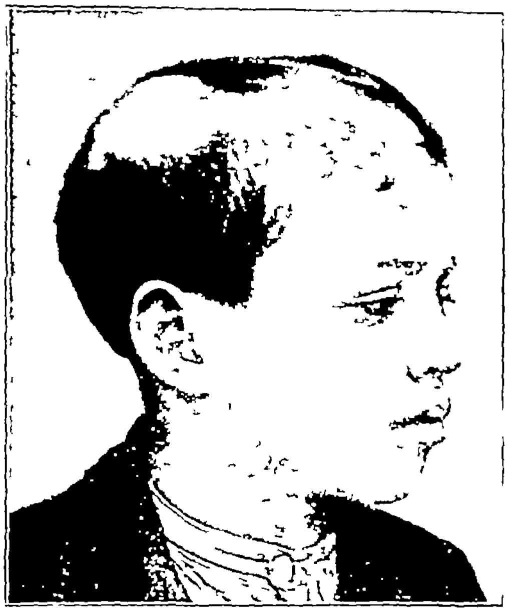


Fig 3 —Patient in Case 1 Alopecia areata of 14 months duration cured with the uviol lamp

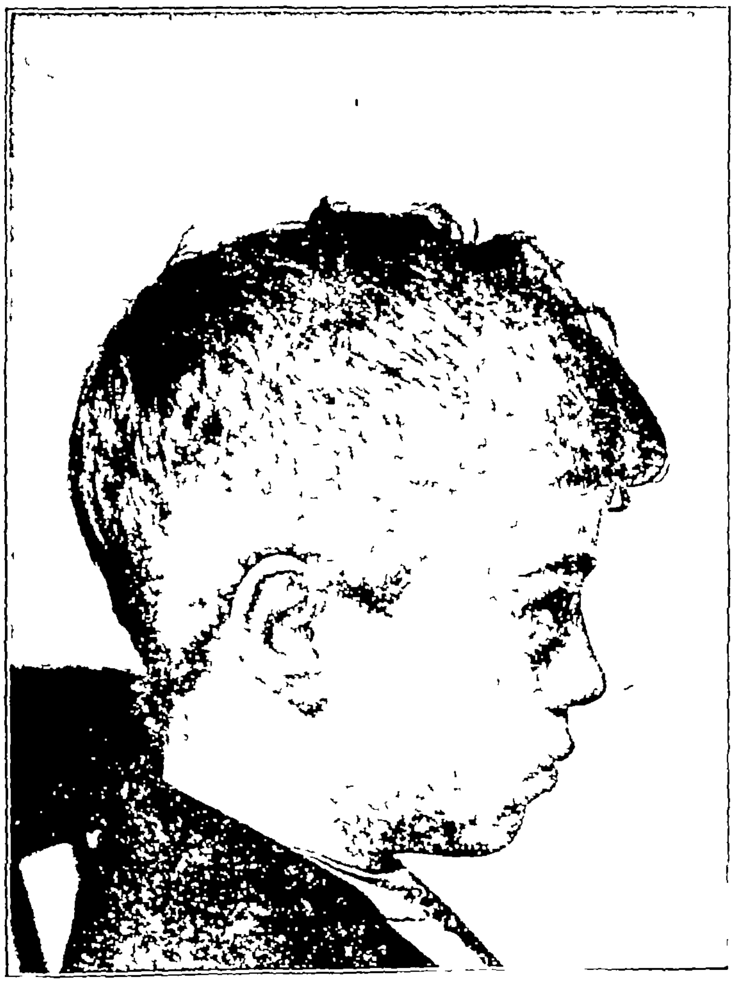


Fig 4 —Showing restoration of hair

Axman found uviol light of great value in leg ulcers

In summing up my impressions as to the value of the mercury vapor lamp I should say that it appears most capable of accomplishing good in alopecia areata leg ulcers and certain forms of eczema The light is rich in chemical rays, but lacks deep penetration These lamps have the advantage over others that a broad volume of light is emitted which can be conveniently applied over large areas Another very pronounced advantage is that the grade of light erythema desired may be produced and even predetermined by the distance and duration of the exposure The histologic changes produced by light have already been referred to, that a dilatation of blood vessels with exudation of fluid and corpuscles and regressive changes in pathologically altered cells occurs after the production of a distinct light erythema is evidence that in properly-selected cases such treatment may prove beneficial

Such phototherapeutic measures are not to be regarded as panaceas but as aids to other approved agents in the treatment of certain cutaneous diseases

DISCUSSION

Dr W S Gottheil, New York City, said that in a corner of his waiting room there stands a big apparatus containing a 60 ampere arc light—the American form of the Finsen apparatus—unused for many months He employed it persistently for a long time, and did get results, some of which have been published, but he hardly uses it at all now His experience can probably be paralleled by some of the members present He knows of one case, at least, in which a very costly Finsen apparatus was imported, and, when he last heard of it, it was still unpacked, owing to the amount of space that it required, and the time that its use would consume In Copenhagen it may be possible to give daily treatments of an hour each for months at a time, but Dr Gottheil's experience is that patients here will neither submit to it nor pay for it Furthermore, the applicability of the method is limited In alopecia areata he has obtained no results that were not attainable by simpler means Some patients with lupus erythematosus were greatly improved and apparently cured, but some relapsed, and he has come to believe that one can never tell when this treacherous disease is ended In lupus vulgaris the x ray and ordinary mechanical methods of treatment are generally preferred The Copenhagen results, according to all reports, are the best that have yet been attained

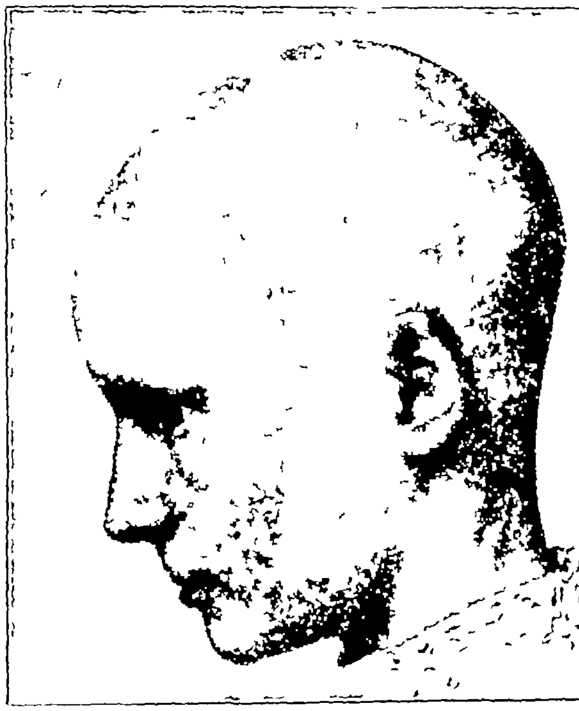


Fig 5 —Patient in Case 4 —Alopecia areata of 10 years duration treated without success with the London Hospital lamp Areas of light erythema shown

in this disease, but there must be great simplification of the method and shortening of the time required before it can be used extensively here So far as penetration of the body by light rays is concerned, Dr Gottheil proved some years ago that a sufficiently powerful beam of light can be made to penetrate the entire thickness of the human body and print on a photographic plate All the rays, even the ultra violet, can be made to pass through the surface of the body and reach the internal organs A necessary condition, however, is to have a light beam of sufficiently high candle power, 50 or 100 candle power incandescents are toys, not efficient therapeutic agents A 30,000 candle power arc ray, concentrated as much as possible, and cooled, from a 60 ampere current, is as small a light as should be used for action on anything deeper than the epidermis

Dr L **Duncan Bulkley**, New York City, said that several years ago he went to Copenhagen, and, after a careful investigation of the Finsen method of treatment, became enthusiastic regarding it, and purchased one of the lamps He had it shipped to New York, properly set up and wired from the street, with a special attachment to allow water to run through the lens That was two or three years ago He has used it in two cases of lupus, and for the past year or two it has remained untouched He is still strongly in favor of the Copenhagen method of treatment and if a bad case of lupus vulgaris, with lesions about the face, should come to him to morrow, he would advise the patient to go to Copenhagen Finsen's results, as shown at the dermatologic congresses both in Paris and Berlin, were very brilliant, and Dr Bulkley said that Dr Hyde of Chicago is very enthusiastic regarding them In Copenhagen Dr Bulkley saw 150 patients treated, men and women who had had the disease for ten twenty and even thirty years, and the results were simply superb By the method pursued there the lens must be held over one little spot for an hour at a time, and afterward a salve is applied A corps of nurses makes these applications, and some of the patients have had as many as 600 or 800 of them, the treatment sometimes continuing over a period of from three to five years The results obtained are better than he has ever seen by any other method of treatment, but he thinks that if the x ray is used rightly, excellent results can be obtained in lupus It is not so satisfactory, however, as the method followed in Copenhagen, and it is apt to result in scarring and burns He has had little experience with the other forms of light

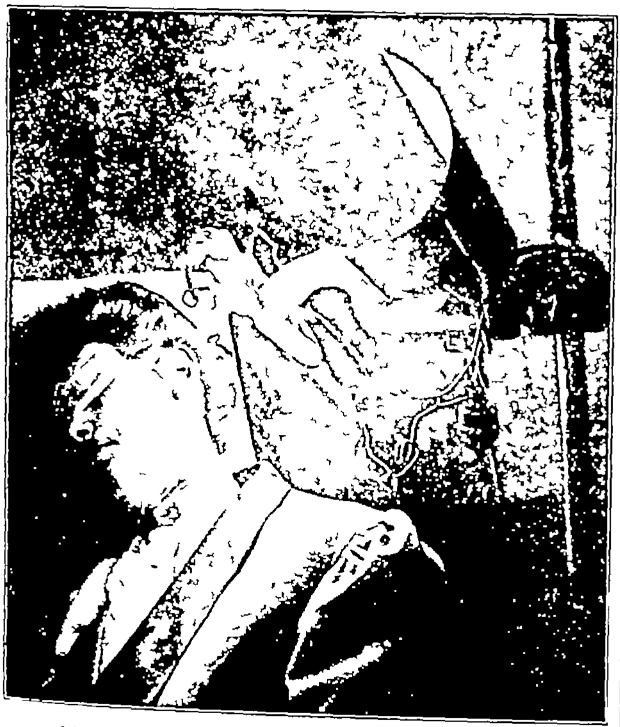


Fig 6—Method of using two uviol lamps in series

Dr W T **Corlett**, Cleveland, said that four years ago he visited Copenhagen and spent some time at the Finsen Light Institute, and saw many patients treated He was impressed with the great care with which Finsen's assistants employed this method and by the benefit that was derived from the treatment, especially in lupus erythematosus and nevus After getting better acquainted with some of the assistants, he learned that the consensus of opinion seemed to be that the best results are obtained in lupus erythematosus and vascular nevi Like Dr Bulkley, he became enthusiastic regarding the treatment, and made arrangements to have instruments and nurses sent to this country He afterward visited Berlin and saw Finsen's apparatus employed, but the important details of the technic, such as the proper pressure and focus, were not observed The results obtained were indifferent, and he believes the operators regarded it as an indifferent method He then visited the clinic of Lange, who was carrying out two series of experiments, one by the well known surgical methods and another series by the Finsen light, but did not remain long enough to see the results of these experiments He afterward saw a report in print that the light method has no special advantages over the ordinary surgical methods that Lange was using In Paris he found that the Finsen light treatment is applied in an indifferent manner, but in London it is given as in Copenhagen, under specially instructed nurses In short, the result of his tour of investigation made him somewhat skeptical as to any special advantage the Finsen light possesses over other less complicated methods, and he gave up the idea of ordering a lamp

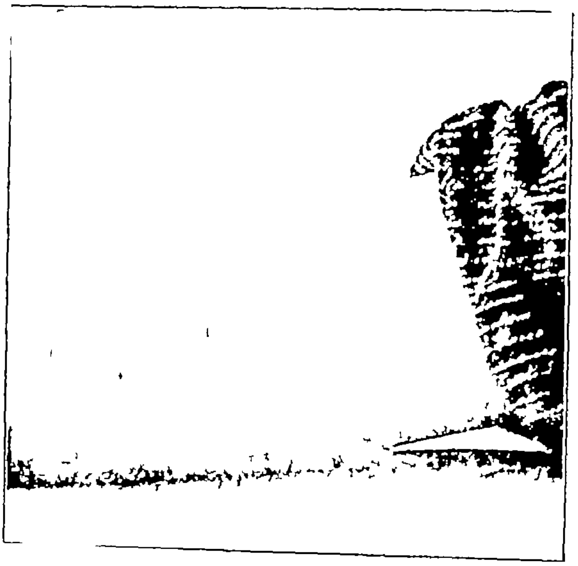
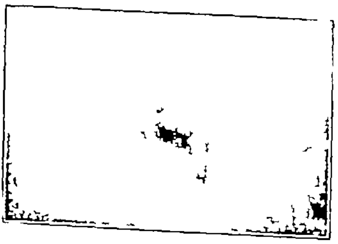


Fig 7—Condition of redness two days after a radiation of 15 minutes duration with the uviol lamp One of the squares was kept under water during radiation in order to ascertain if the heating of the skin by the lamp during radiation had any particular effect. The two places did not differ in any respect (Schott)



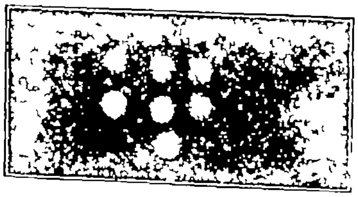


Fig 8—Shadowgram of a triangular piece of lead on a photographic film in the mouth the cheek in contact with the pressure lens of the large Finsen lamp (50 amperes current)

Fig 9—Shadowgram of a perforated piece of lead on a photographic film in the mouth the cheek being one inch from a 16 candle power incandescent lamp backed by a parabolic reflector Exposure 30 seconds

Dr J **Frank Wallis**, Norristown, Pa, showed a hood, made of sheet iron, with an aluminum reflector, and which is attached to the ordinary arc lamp From this lamp he can obtain intensely blue or violet rays, and with it he has from time to time treated small acne lesions One advantage of this lamp is that the nearer the carbon, the stronger is the blue light In addition to acne lesions, he has used it for small abscesses and sebaceous glands There are also some cases of eczema that react very quickly to this light

Dr M L Heidingsfeld, Cincinnati, said that he has used a Heraeus quartz mercury lamp with the greatest satisfaction He said that, in his opinion, it possesses decided advantages over other instruments used in phototherapy, particularly in the furuncular type of acne and in the treatment of small abscesses, on which it exerts an influence superior to any other form of light therapy that he has ever tried In many of these cases he has used the *x* ray and the London Hospital lamp, but mostly with indifferent results He has also used a Kromayer quartz mercury lamp and he has found the effects of this and the Heraeus instruments rather remarkable They emit practically no heat at a distance of from six to eight inches, and, after an exposure of three or four minutes, they give rise to a decided bullous reaction The effect of these instruments on certain forms of skin affections is striking and is almost remarkable in indurated and pustular acne, chronic forms of eczema and dermatitis, particularly infectious types, will be favorably influenced by a few applications of this form of light treatment Cases of folliculitis and kerion, which resisted all forms of simple measures and rather prolonged *x* ray treatment, yielded almost completely to one thorough application of this form of light energy Some cases of lupus erythematosus, which baffle all other forms of treatment *x* ray and topical applications, have yielded very rapidly to this form of treatment Others, however have not been favorably influenced Unlike Dr Schamberg, he has not obtained any favorable influence from this form of treatment in alopecia areata, but it may be due to the fact that he did not push the treatment In other respects his results do not differ materially from those of Dr Schamberg, and he heartily endorses all the latter's favorable comments concerning this form of treatment

Dr J H Mudgett, Philadelphia, said that he has had considerable personal experience with light therapy, and he does not see how so many physicians, especially dermatologists, are so skeptical regarding it, and wonders whether or not they have any right to form an opinion about something they have never tried With phototherapy it must be the same as with anything else, one must have experience with it before any opinion can be formed regarding it Dr Mudgett had five cases of ulcers of the leg last October which he treated successfully with an ordinary 500 candle power incandescent light, making hour exposures and repeating the treatment every day and every other day Some of them took two or three months to heal, but they were all long standing cases—as long as ten years In addition to the phototherapy he only used ordinary antiseptic applications, such as dermatologists recommend In conclusion he suggested that dermatologists give this method of treatment a fair trial, in comparison with other methods

Dr Jay F Schamberg, Philadelphia, said he believes that it is pretty well agreed that the treatment of lupus vulgaris remains the dominant field for phototherapy Nevertheless, there are other dermatoses in which light treatment may be found useful There is a distinction between phototherapy and actinotherapy The blue, violet and ultra violet rays are not the only frequencies capable of influencing tissues It has been shown that there is real efficacy in heat rays *in certain* conditions The high power incandescent lamps should be given a trial by competent and conservative workers Extravagant claims have been made for various forms of light treatment which can not be indorsed It has been shown that the penetrative power of light rays is in inverse proportion to their bactericidal effect

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Tainted Air—The man who is 60 years old has spent 20 of those years in his bedroom If his mind has been saturated with the old time delusion that night air is dangerous he has probably proceeded to make it a hundred fold more dangerous by breathing over and over again the poisons that have been thrown off from human lungs—*Good Health*

BLASTOMYCOSIS IN AN INFANT *

J B KESSLER, M D
Lecturer on Dermatology and Clinical Dermatology State University of Iowa
IOWA CITY IOWA

This is a peculiar disease, from a geographic standpoint Its home so far seems to be confined to America and only in a few localities, largely in the Mississippi valley, if we also include the city of Chicago The forms on the Pacific coast seem to differ from those found in other localities in the United States and are named protozoic and coccidioidal

In cases of protozoan infection the organism develops by endogenous spore formation and not by budding while in blastomycosis the only way of development in the tissue is by budding The cultures also differ somewhat from those obtained in blastomycosis

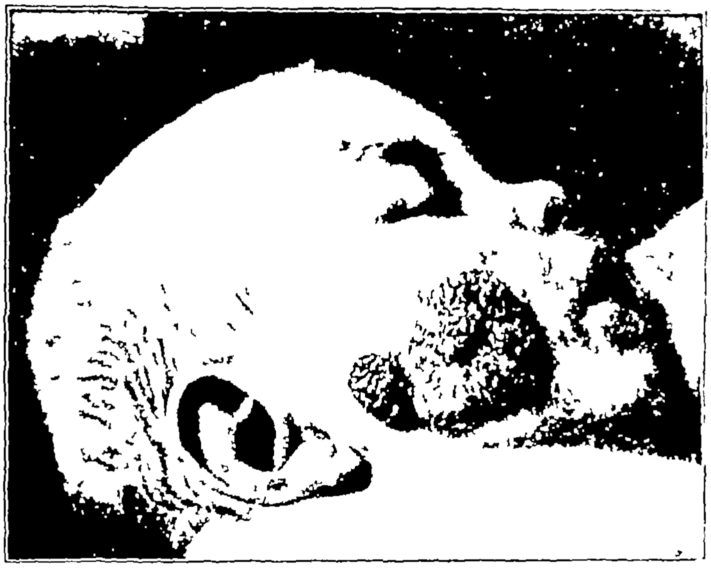

Fig 1—Blastomycosis F J at 8 months showing lesion on right cheek

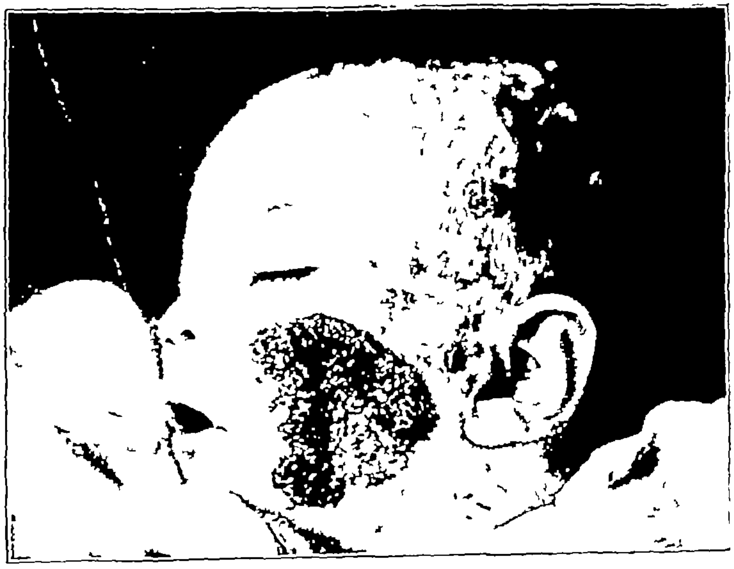

Fig 2—Blastomycosis F J at 8 months showing lesion on left cheek

The first case reported from Boston was in the latter part of 1906 There were no recognized cases in England up to 1903, a doubtful one was reported from Madrid the same year I have seen three cases in the past eight years, one of them somewhat doubtful

I am indebted to Dr W W Jones for referring to me the patient who is the subject of this paper and for the previous history as well as the family history

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City, June, 1907

History—E J, when she was four to five months old, was brought for treatment of an eruption which had appeared on her head and cheeks a week or ten days previously The lesions consisted of patches about the size of a silver dollar, the one on the left cheek was oblong in contour, those on the right cheek and scalp were more or less circular The patches consisted of crusts which were raised and warty in appearance, with red borders, there was a small amount of pus under the crusts and especially at the edges In a few days other pin head sized patches appeared around these, and formed crusts which gradually enlarged until, coalescing with the larger crusts, they formed large patches An ointment was applied, which seemed to stop the extension of the lesions, but did not remove them This treatment was continued for about three weeks. Then the little patient passed into the hands of a second physician, and later to a third The disease had been named eczema, double eczema, etc About three months later, Jan 24, 1906, the baby was returned to the first physician and by him referred to me for a diagnosis and to recommend treatment.

Family History—Mother of child had had two attacks of appendicitis, was of a nervous temperament, fairly well nourished, and had never had any skin lesions The father had always enjoyed good health and never had any skin disease Father's mother had heart trouble Aunts and uncles on both sides had been free from integumentary lesions

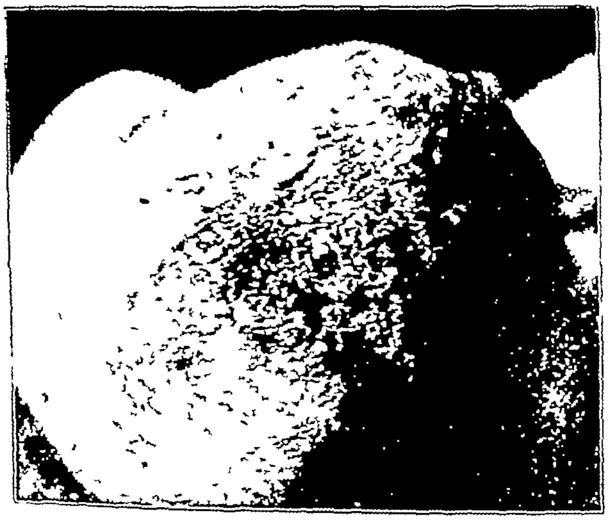

Fig. 3—Blastomycosis E J at 8 months showing scalp lesion

Examination—The child aged eight months white female weighed twenty pounds and seemed to be well nourished I found a lesion on the right cheek (Fig 1), two and one half by three inches in area on the left cheek (Fig 2) one a little larger, which was inclined to be circular in outline one large patch on the scalp (Fig 3) extending from the anterior of the occiput nearly or quite to the frontal bone in width about three and one-half inches, with small split pea sized lesions scattered from the facial to the parietal lesions and many small patches on the buttocks and hips which were devoid of crusts or warty appearance, but retained the red border—probably due to the contact of urine and frequent bathing The patches on the face were elevated from one-eighth to one-fourth of an inch above the surrounding skin the surface was covered by papilliform elevations separated by small clefts of varying depths giving them a warty or cauliflower appearance The borders sloped more or less abruptly from the elevated roughened surface to the surrounding skin In color the lesions were not as dark as are those usually encountered in older patients but were set with as many small abscesses as are usually found but the warty projections were more delicate and a small amount of pus could be made to exude on pressure The subjective symptoms would naturally be few in one so young she seemed to be well nourished and nursed with a relish When she became too warm she would scratch her scalp, indicating that it itched slightly Removing crusts, for culture and microscopic examination, caused the little one to cry out, indicating that the lesions were very sensitive to trauma, the base was very friable and vascular

The clinical diagnosis was that the disease was probably blastomycosis This was confirmed by microscopic examination

Microscopic Examination—An examination was first made of the dry scab covering considerable portions of the lesion proper, and it was found to consist principally of serum, dead epithelial cells and the powder which had been used for treatment This dry scab was treated with a 5 per cent solution of potassium hydroxid, but none of the specific micro organisms were discovered On squeezing the tissue a purulent fluid escaped Under the microscope this was found to consist principally of pus cells, broken down tissue elements and a few blastomycetes, with some bacteria, principally staphylococci Next a piece of the proliferating newly formed tissue of the lesion proper was grasped with a forceps and excised with a sharp knife A part of this was used for making a microscopic section, another part for the inoculation of culture media, and a third piece was macerated in a 5 per cent solu

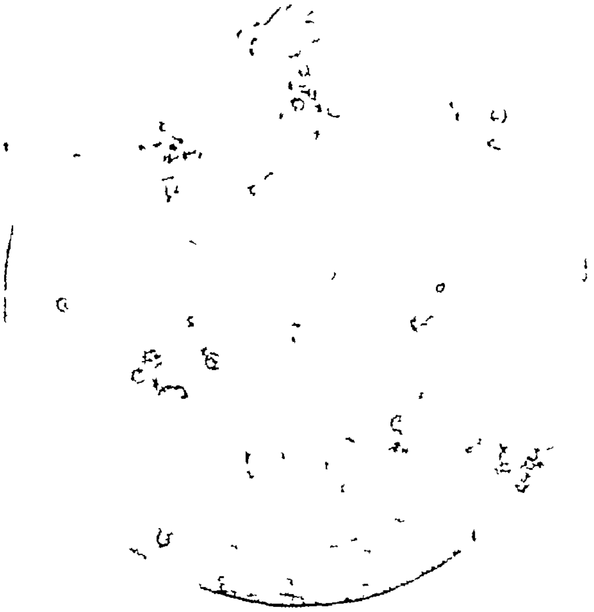

Fig 4—Photomicrograph showing budding blastomycetes Objective 1/6

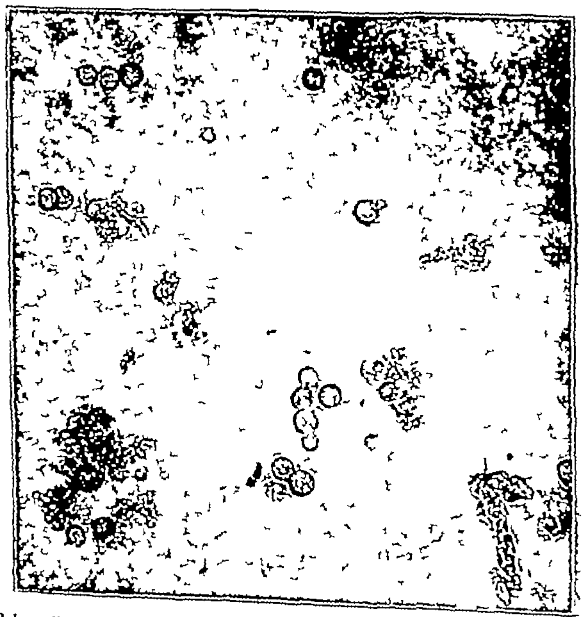

Fig 5—Photomicrograph showing organisms in pairs. Objective 1/6

tion of potassium hydroxid After the cellular elements had become clarified by the caustic potash, it was found that the field of the microscope was filled with a large number of spherical organisms with a double wall and varying in diameter from 14 to 20 micra Many presented small budding processes (Figs 4 and 5), others grew in pairs, the protoplasm of both being continuous In such cases one of the organisms evidently presented a rather mature bud The organisms presented a rather refractile appearance because of the clearing of the protoplasm Pieces of the diseased tissue were placed in tubes of glucose agar and blood serum, which were then placed in an incubator at a temperature of 37 C After two days a growth was visible which on microscopic examination was found to consist principally of blastomycetes and a few staphylococci These were then isolated by the use of the Petri dish method and pure cultures of each obtained The staphylococcus presented its ordinary characteristics, and was no doubt present as a contaminating micro organism The cultures of the blastomycetes grew well both in the incubator and at body temperature Those made on glucose agar grew much more rapidly than those on blood serum There was considerable difference between the cultures when grown at incubator or ordinary room temperature In the former they remained as rather small distinct, grayish colored, moist colonies which on microscopic examination were found to consist principally of budding cells On the glucose agar, however, they developed more rapidly, producing a dry, whitish woolly, elevated growth which spread over the entire surface of the medium, and which, on microscopic examination, was found to consist principally of hyphæ The sections were imbedded in celloidin and cut 12 micra in thickness The piece of tissue was found to consist almost entirely of epidermis, the cells of which had markedly proliferated These consisted principally of a downward growth in the form of a wide irregular process In many places, particularly in the deeper portions, a number of necrotic foci were found in a nest (Figs 6 and 7) and projections of epithelial cells These areas were filled principally with pus corpuscles and detritus of epithelial cells, and contained also a number of blastomycetic organisms

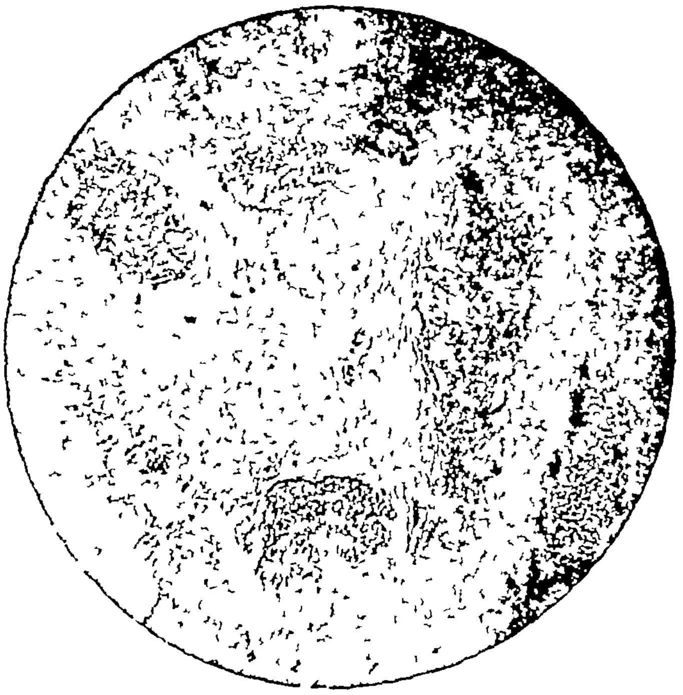

Fig 6—Photomicrograph of section through lesion showing areas of necrosis containing blastomycetes Objective ¾

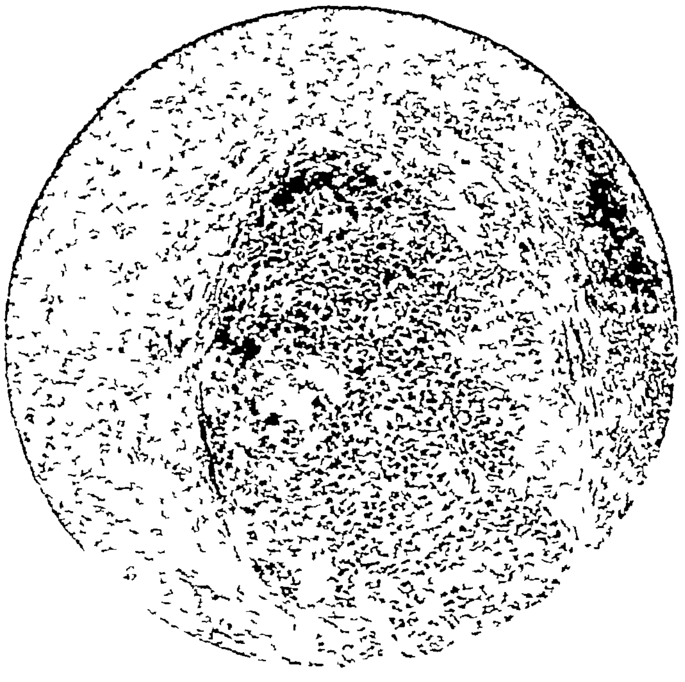

Fig 7—Same as Fig 6 under 1/6 objective

Treatment—Potassium iodid was recommended, as I did not think it prudent to use the Roentgen ray on one so young There was besides, the difficulty of keeping the baby quiet when not asleep, as we found when the photographs were taken, those of the face and scalp were taken while she was asleep, the shoulder and buttocks were taken while she was awake and were destroyed Preceding our examination it had been proposed by physicians that the child be weaned, why, I do not know, it being well nourished and stout for a babe of eight or nine months I think it would have been a sad mistake, as we would have lost the indirect method of treatment I took my cue from the beneficial effects of treating the mother, who has a child with hereditary lues The mother and child both took potassium iodid A wash of formalin 2 per cent solution was first used, then an ointment containing salicylic acid and zinc oxid with a lanolin base The scabs softened and came away, and at the end of three weeks there was marked improvement, at the expiration of eight weeks all the scabs had disappeared, leaving only slight scars on the cheek (Fig 8), which promise to entirely disappear in time During the time the child was taking treatment it seemed well and grew rapidly

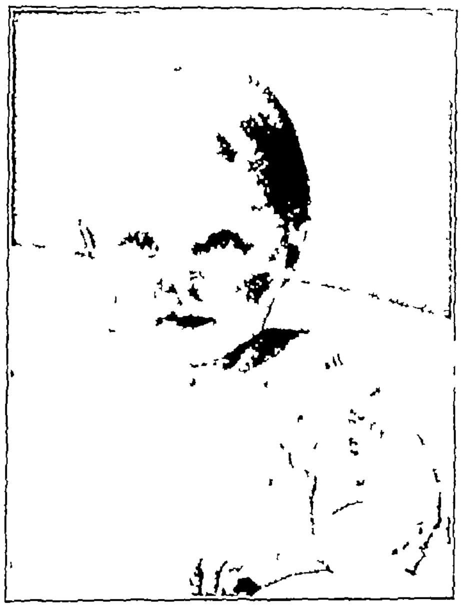

Fig 8—Blastomycosis F J at 11¾ months showing cicatrices on cheeks

My reasons for reporting this case are the geographic peculiarities, the beneficial effects of potassium iodid in the direct and indirect treatment of blastomycosis, and, last but not least, the fact that this is the youngest patient (eight months old) of which I have any record with the limited literature at my command I am greatly indebted to Dr Albert for the microscopic findings

DISCUSSION

Dr William A Pusey, Chicago, said he thought the next youngest case was in a girl of 14 years, under his own care He knew of no other infantile case reported When Dr Kessler first described the clinical appearances of his case, Dr

Pusey thought that perhaps the case was one of vegetating dermatitis from pus organisms, but the bacteriologic findings, he said leave no doubt as to the diagnosis.

The case emphasizes that blastomycosis may affect one at any age, the cases now on record range from eight months to the senile stage of life. To physicians in Chicago and in the Mississippi Valley blastomycosis is an exceedingly important subject. It is no longer a clinical curiosity in Chicago, where there have been many cases, so that even the hospital internes are acquainted with it. To many it is a source of constant speculation to learn why blastomycosis is so prevalent in our part of the country, and he thought that we are entirely ignorant on that score. It is by no means a trivial disease merely affecting the skin. Not infrequently cases of systemic blastomycosis closely simulate systemic tuberculosis. Dr. Pusey called attention to the fact that from ordinary pus infection a histologic picture may result similar to that of blastomycosis. He recently removed a papillomatous mass from the corona glandis which gave a histologic picture practically identical with that of blastomycosis. There was a dense infiltration of the corium with round cells, among which there were many mast cells and plasma cells. There was great overgrowth of the rete with down growth of interpapillary pegs, and all through the rete were to be found intraepithelial abscesses. Except for the absence of giant cells, the picture was that of blastomycosis. A number of Chicago men, familiar with blastomycosis, agreed that the picture was that of blastomycosis. Nevertheless, a rather careful search of the specimen failed to show blastomycetes. It was not difficult to demonstrate the presence of staphylococci in the tissue. Cultures made from the miliary abscesses showed no blastomycetes, but pure cultures of *Staphylococcus albus*. The case, therefore, seems to be one which clinically and histologically is closely like blastomycosis and yet is a lesion produced by a common pus organism.

Dr. Henry C. Baum, Syracuse, N. Y., gave a summary of a case which he showed at the meeting of the American Dermatological Association two or three years ago. A colleague developed a lesion on the back of the right hand which was recognized clinically as blastomycosis, but in which the micro-organisms could not be found. About three months later a similar lesion developed on the right ala nasi and the adjacent cheek, and a third lesion behind the left ear. As the diagnosis was reasonably positive, he was promptly put on potassium iodid and exposed to the *x* rays. For a long time—perhaps six months—the treatment had no appreciable effect on the lesions, except that they did not extend. After many unsuccessful attempts, the organisms were finally found in each one of the lesions, and at the time the patient was presented, cultures were also shown and the diagnosis was concurred in by all the members present. The case went on practically to recovery. First, the lesion on the cheek and nose disappeared, and then that on the scalp, and the hair, which had disappeared from that area, grew again. In all these patches there developed an atrophic and drawn appearance of the skin, and perhaps for a year later these patches remained soft and white and smooth. Dr. Baum thought the point of greatest interest in this case was the absolute inability to find the micro-organisms for a long time, in spite of repeated smears and cultures on various media and blood serum, although finally they were located in all the lesions. Another case that came under his observation was that of a girl 12 years old in whom the process had involved the dorsal aspect of the right calf. Another was in a woman 52 years old, with a lesion on the back of the right hand. In both of these cases there was no difficulty in finding the organism from the start. In this last case no iodin preparation was given nor were the *x* rays used, the treatment being limited to the application of an indifferent ointment and the use of the high frequency current from the vacuum tube. The process healed very nicely, and in less time than did that in the first case, and in any future cases that come under his observation he is inclined to try the high frequency current before resorting to the *x* ray.

Dr. W. T. Corlett, Cleveland, Ohio, said that the only case thought to be blastomycosis he had seen in Cleveland was not confirmed by the culture and microscopic findings after repeated trials. At one time it was thought that the characteristic budding yeast fungus had been found but it proved to be due to the starch dressing employed. The patient has since died. The patient was shown at the meeting of the American Dermatological Association in 1906, when some doubt was expressed as to its nature.

Dr. John A. Fordyce, New York City, called attention to Dr. Pusey's remark that pyogenic organisms may produce lesions similar to blastomycosis. Two years ago, at a meeting of the American Dermatological Association, Dr. Fordyce showed some photographs which presented the clinical picture of blastomycosis, but the organisms could not be found in the lesions. There was some epithelial proliferation and cell infiltration, but the characteristic micro-organism was absent. He emphasized that giants cells are found in blastomycosis, but not in pyogenic lesions.

Dr. Jay F. Schamberg, Philadelphia, reported an error of diagnosis in regard to a supposed case of blastomycosis cutis. The patient was a man with an extensive papillary ulcerating growth on the back of the hand. Sections of this were made and cultures taken from the pus which gave a rich growth of yeast fungus. The microscope failed to reveal the yeast fungus, but gave a general picture not unlike that of blastomycosis. On account of the histologic picture and the cultural findings a diagnosis of blastomycosis was made and the patient was treated on that basis. He subsequently grew worse, and further microscopic examination positively demonstrated that the case was one of carcinoma. An amputation of the hand was done, and carcinoma subsequently developed in the axilla, necessitating amputation of the arm and ultimately terminating in death. He felt sure that the presence of the yeast fungus was due to contamination from the air. Care is therefore necessary in diagnosis without confirmation by both histologic and cultural studies carefully pursued.

Dr. M. B. Hartzell, Philadelphia, remarked that the discussion shows that the diagnosis of blastomycosis cutis may be at times extremely difficult, and can only be definitely settled by microscopic examination. Dr. Hartzell recalled a case, which he saw about 18 months ago, in which there was a papillomatous lesion on the back of the hand which closely resembled blastomycosis. Sections and cultures from this lesion were entirely negative, and it healed spontaneously within six weeks, yet clinically it was a perfect picture of blastomycosis. Without finding the organisms of blastomycosis one is not justified in making that diagnosis.

Dr. J. B. Kessler, Iowa City, Iowa, agreed regarding the difficulties of diagnosis in some cases. When the case he reported first came under his observation, his son, Dr. J. C. Kessler and he narrowed the diagnosis down to two affections, namely, mycosis fungoides and blastomycosis cutis. They had recently had a case of mycosis fungoides, and with the microscope they were able to establish that this case did not belong to that category, but was one of blastomycosis. Whether or not the local treatment had any beneficial effect in this case he was unable to say. Potassium iodid was administered to the mother with the idea that it might indirectly benefit the child.

Posterior Basal Meningitis Made a Notifiable Disease.—On the beginning of the epidemic of cerebrospinal meningitis in England, the London County Council made the disease notifiable for a period of six months, and up to June 18 fifty-six cases were reported. The question arose whether or not the term cerebrospinal fever included posterior basal meningitis. The Royal College of Physicians appointed a committee which reported that intermediate cases occur in which differentiation is impracticable. No difference in the bacteriology of the two diseases has been demonstrated. The committee recommended that for notification purposes posterior basal meningitis should be included under the term cerebrospinal fever. That after notification, further details of the cases should be obtained, (a) in hospitals through the medical officers, (b) in private by a special officer available to investigate the cases bacteriologically or otherwise in association with the physician in charge.

INTESTINAL PERFORATION IN TYPHOID FEVER, ITS DIAGNOSIS AND SURGICAL TREATMENT

J E ALLABEN, M D
Surgeon to St Anthony Hospital
ROCKFORD, ILL

If it were necessary that one should make an apology for offering a contribution on this subject, I should say that it has been twenty-three years since Leyden first proposed the surgical treatment of this malady and Mikulicz did the first successful operation, giving to humanity the first ray of hope in a contest where death was well nigh inevitable A year and a half ago I lost my own son from this accident Had I made as careful a study of the diagnosis of perforation in typhoid before his illness as I have made since, I think his life might have been saved

And so I feel somewhat like the rich man, the story of whom is told in sacred history, who, languishing in eternal punishment, looked up to Lazarus in the bosom of Abraham and implored him, if he could not come to him and ease his suffering with a cup of water, to go back to earth and warn his brothers so that his fate might not be theirs

The scope of this paper includes a brief history of the surgical treatment of intestinal perforation in typhoid fever the presentation of some of the statistics of Keen collaborated by Wescott, Tinker, Harte and Ashhurst of all cases operated on up to 1903, a brief analysis of the statistics of all the cases operated on from January, 1903, up to January, 1907, the diagnosis and treatment of intestinal perforation in typhoid, and, lastly, the report of my own case

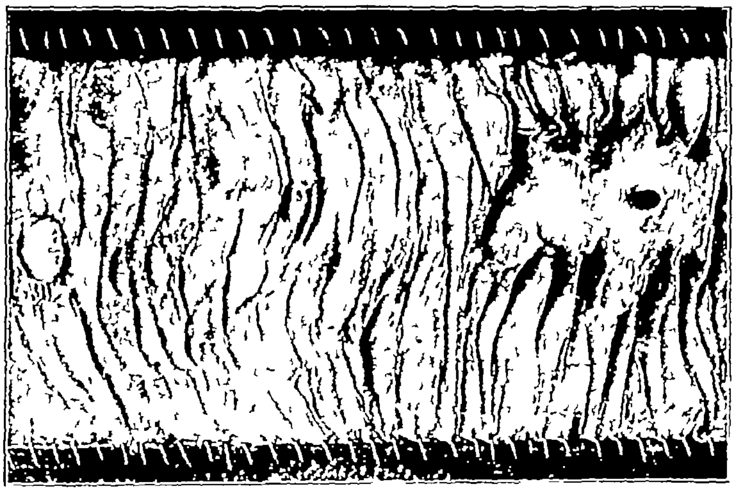

Fig 1—Large ulcer with small perforation and numerous small ulcers penetrating mucous coat Typhoid fever, third week perforation, fatal peritonitis (from specimen in U S Army Medical Museum, Washington, D C) Dr W C Miner, acting assistant surgeon, U S Army

The statistics of the early operation for this accident were so discouraging that for many years little progress was made The early statistics of Keen give a mortality of over 80 per cent Harte and Ashhurst report the total number of patients operated on up to January, 1903, as 362 with a mortality of 74 03 per cent I have collected so far as possible the cases of patients operated on from January 1903 to January 1907 a total of 162 with a mortality of 62 34 per cent It will be observed by these statistics that in the last four years there has been a fall in the mortality rate from 74 03 per cent to 62 34 per cent

These statistics are what might be expected resulting no doubt from the fact that we are becoming more vigilant in our efforts to detect perforation at the time of its occurrence and in procuring for our patients an early operation

The ileum is the seat of perforation in about 95 per cent of the cases, and the perforation when in the ileum, in a majority of the cases is within 18 inches of the cecum Occasionally it is found as far as three feet from this locality

The different forms of perforations are well represented in Figures 1 to 5

DIAGNOSIS

In the clear-minded cases where the onset is sudden, a diagnosis can be made with tolerable certainty In the cases where stupor is pronounced and we are obliged to rely almost wholly on our own observation and on physical examination, the diagnosis is very difficult, sometimes impossible But in every case where the conditions indicate the probability of a perforation, we are justified in making an exploratory incision and by inspection establish a diagnosis A long step in advance will be made when we fully realize the importance of an attempt in our diagnoses of differentiating between the symptoms of perforation and those of advancing septic peritonitis

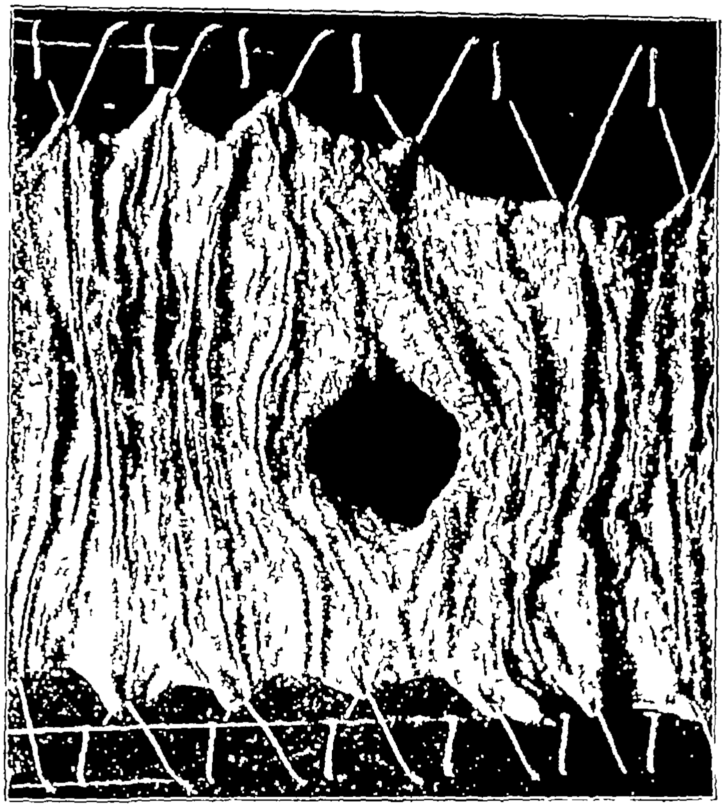

Fig 2—Large perforation typhoid fever fifth week perforation fatal peritonitis soldier aged 24 was convalescing (from specimen in U S Army Medical Museum Washington D C) Dr Ely McClellan, surgeon U S Army

It is undoubtedly true that an ulcer in a Peyer's patch or solitary gland may extend to the peritoneal intestinal coat without perforating it, giving symptoms of perforation and local peritonitis yet to make such a diagnosis and to depend on Nature to form about this spot a wall of adhesions to prevent perforation or general peritoneal infection is as unscientific and unsurgical as to depend on Nature to perform the same office in appendicitis

The symptoms most frequently observed after perfor-

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* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty eighth Annual Session June 1907 This is an abstract the full paper including the bibliography will appear in the Transactions of the Section and in the author's reprints

ation are Pain in the abdomen, rigidity of the abdominal muscles, tenderness, increase of pulse rate and rise of temperature, nausea, chill tympany, disappearance of liver dulness, movable dulness in the flank and a facies characteristic of shock and sepsis According to Murphy, the symptoms of perforation are "sudden and severe pain, nausea and often vomiting, local hypersensitiveness and absence of peristalsis in the painful area"

Of all the symptoms, pain is the one most constantly present, and therefore most reliable Yet pain may be present in other conditions in typhoid, notably in thrombosis of the iliac veins In a series of 500 cases of typhoid observed by McCrae pain was a symptom in 161 cases In these cases the pain was due to perforation in 13, to hemorrhage in 13 and to other known causes in 65, but in 70 cases the cause could not be explained In the author's case the pain appeared suddenly in the lower abdomen, causing the patient to cry out Soon after the occurrence of abdominal pain there was an intense pain in the penis

Hayes says "The diagnosis of perforation is usually easy The symptoms are so characteristic that even when the patient is a foreigner or is delirious, the diagnosis can be made just as well The three cardinal symptoms are, however the sudden pain, rigidity, the tenderness of the abdomen to pressure These three symptoms being present in any case of typhoid fever, operation is indicated and demanded

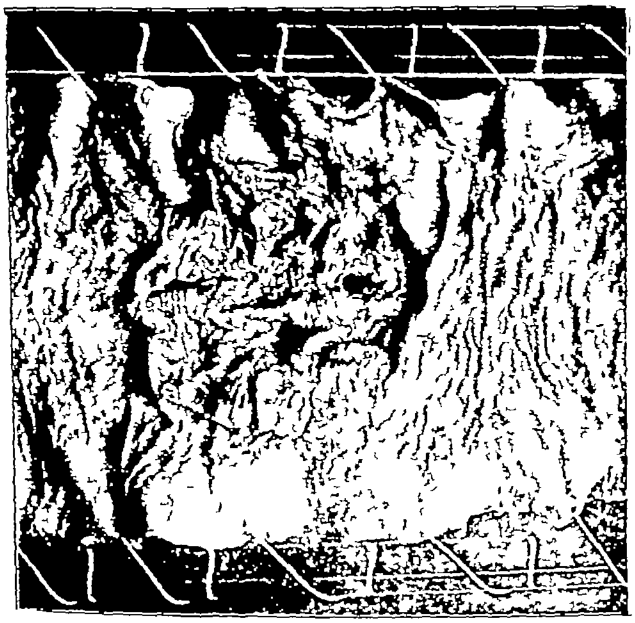
Fig 3—Ulcer and small perforation typhoid fever probably third week perforation of ileum and fatal peritonitis (from specimen in U S Army Medical Museum Washington D C) Dr Rupert Norton acting assistant surgeon U S Army

Some writers report a fall of the pulse rate immediately after the perforation A much more uniform condition is a marked increase in the pulse rate an hour or two after the first symptoms of perforation In the author's case the pulse at 9 45 a m just previous to the time of perforation was 98 temperature 100 6 F One hour later the pulse was 100 temperature 101 3 F The pulse and temperature continued to rise for seven hours at which time they were 108 and 105 4 F respectively Tenderness usually accompanies rigidity

Regarding the leucocyte count, we must say that most authorities do not attach much importance to it as an aid to diagnosis in perforation Cushing makes an important observation regarding this question He says "An individual observation at such a critical time may be misleading, in the first place, because a condition of hypoleucocytosis often is a characteristic of the fever and a count apparently within normal limits of 8,000 to 10,000 may actually represent a double increase in the number, and secondly, because by a single count the transient 'wave of leucocytosis' may entirely escape notice" It must be considered confirmatory of other symptoms rather than a positive indication for surgical intervention

TREATMENT

In the light of late experience the treatment of intestinal perforation in typhoid is unquestionably limited to surgical procedure

TECHNIC OF OPERATION

The right lateral incision is the one almost invariably selected for the operation The appendix and cecum should be examined, and if the perforation is not located in these organs, the ileum should next be examined and then the colon According to Keen, in ten cases of perforation of the colon five were in the sigmoid flexure This writer adds "If therefore no perforation is found in the ileum, cecum or appendix, the next most likely place is the sigmoid flexure" The perforation may be closed in several tiers with the interrupted or continuous Lembert, purse-string or the mattress suture Silk or cotton should always be used

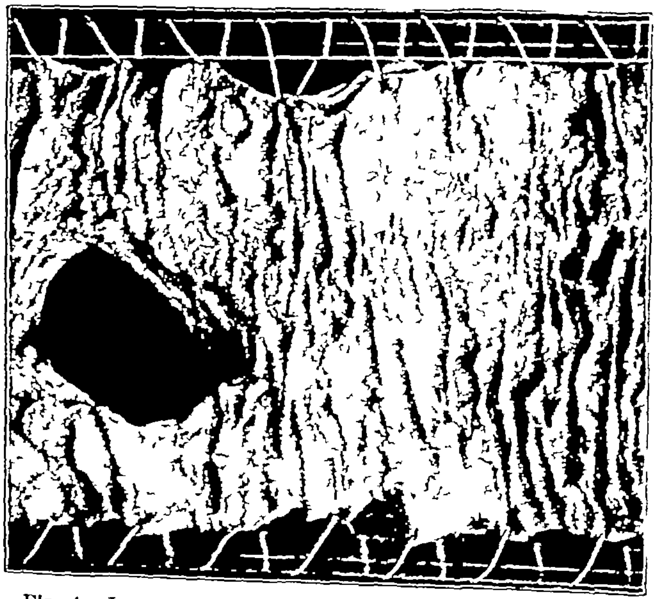
Fig 4—Large perforation and two small perforations typhoid fever third week perforation fatal peritonitis (from specimen in U S Army Medical Museum Washington D C) Dr W H Forwood, surgeon U S Army

The last three feet of the ileum should be examined for other perforations or for thinned ulcerated surfaces threatening perforation, and such surfaces inverted by suture in the same way as for perforation

As to the best method of dealing with the extravasated material in the peritoneal cavity there is considerable diversity of opinion Some employ extensive flushing of the cavity with physiologic saline solution until the fluid flows away clear, others recommend thorough cleaning away of this material by dry sponging a few decry any attempt to remove the pus and intestinal extravasations as a useless waste of time, endangering to a greater degree the patient's chances for recovery

In a vast majority of these cases, we are dealing simply with a general septic peritonitis in typhoid which differs in no essential particular from the treatment of the same condition in perforating gastric or duodenal ulcer, perforation of the intestine from any cause of perforating appendicitis The most rational procedure it seems to me has been evolved by Dr J B Murphy for the treatment of general septic peritonitis, which embraces the following principles

1 Rapid execution with the smallest amount of work possible in the abdominal cavity consistent with the exigencies of the case

2 The avoidance of every procedure calculated to favor the extension of infection or absorption of bacteria, such as mopping away débris and lymph deposits on the intestines and flushing the abdominal cavity

3 The providing for thorough drainage by rubber tubes and posture (Fowler's position)

4 The elimination of toxins

Having disposed of the intestinal perforation and drainage tubes, I think we should not stand longer on ceremony, but get out The lymph deposits from the intestines should not be mopped off, nor the abdominal cavity flushed out in any case The first procedure is positively harmful, and the latter an unnecessary waste of time and probably more likely to spread infection than to limit or eliminate it

It is not the perforation that causes the most profound symptoms we observe in septic peritonitis These symptoms come on some hours after perforation, when the intestine has become denuded of its endothelium, so that there is rapid absorption of bacteria and of septic material

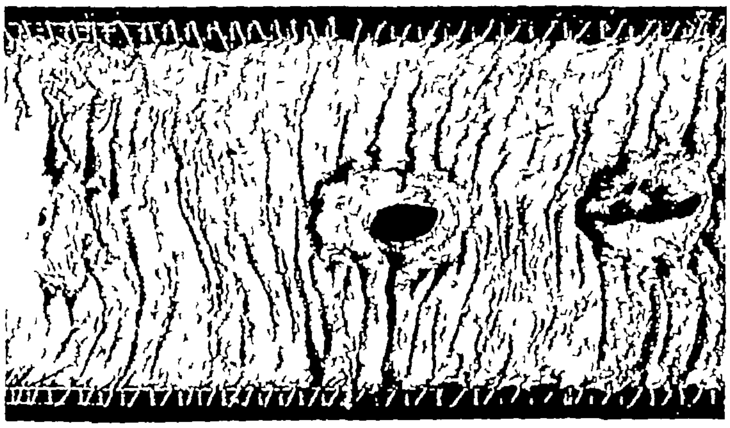

Fig 5—Multiple perforation in large ulcerated surfaces, typhoid fever, third week perforation, fatal peritonitis (specimen from U S Army Medical Museum, Washington, D C) Dr H M Dean, acting assistant surgeon, U S Army

In this connection the experiments on animals by Dr B H Buxton on the processes of absorption in the peritoneal cavity are of intense interest These experiments prove that if micro-organisms, like the typhoid or colon bacillus, are introduced into the peritoneal cavity, they soon appear in the blood, being absorbed almost wholly through the lymphatics of the diaphragm Absorption of bacteria occurs but little, or not at all through the parietal visceral or mesenteric peritoneum Flushing of the abdominal cavity, therefore, carries the bacteria toward the diaphragm, where they are readily absorbed

The profound toxic effects do not appear, however, for about two hours, at the end of which time the bacteria are destroyed and through this process of disintegration liberate their "endotoxins" in the blood We have, therefore instead of shock an overwhelming of the system by intercellular toxins

In treating the peritoneal conditions present in typhoid perforation therefore we should place the patient in the Fowler's position and avoid irrigation which tends to promote absorption of bacteria After closing the perforation, drainage is procured by placing several good-sized drainage tubes deep into the pelvis

Elimination is encouraged by proctoclysis in the following manner A fountain syringe containing one and a half pints of warm physiologic saline solution is hung at such a height that the fluid by force of gravity will issue from the tube by constant dropping or in a very small stream when the tube is passed into the rectum The flow must be controlled wholly by gravity and the elevation will depend on the degree of abdominal tension which will vary in each case (Murphy)

If the flow of the saline solution is controlled entirely by gravity, the intestinal gases will pass out through the tube and be expelled through the solution in the syringe If straining occurs the fluid in the rectum will be forced back into the syringe and not into the bed and will return again to the rectum The administration of salt solution should be repeated every two hours for a period of three or four days

Dr Murphy says "I have given as high as 30 pints in twenty-four hours to a child 12 years old In the last, my forty-first, case of perforative peritonitis, we gave 18 pints of salt solution each twenty-four hours for eleven days, and none of it was expelled into the bed"

Keeping the patient in the correct Fowler position by the ordinary shoulder rest and bolstering up with pillows is a very difficult, and it seems to me, impossible thing to do There is a constant tendency, especially in weak individuals, to slide down into the bed Many times when the patient appears to be in good position an examination will prove that it is a deception The shoulders will be well up on the rest, but the body will be found bent at the costal arch and the abdomen will be on a plane parallel with the surface of the mattress To obviate this, I have had constructed a simple device[1] which seems to keep the patient in this position without constant vigilance on the part of the attendant (Fig 6)

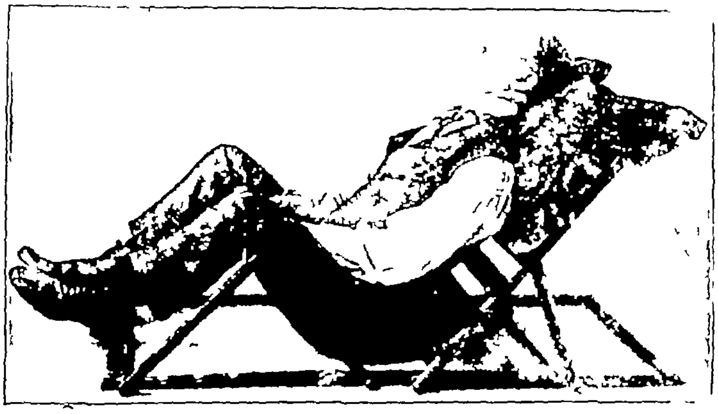

Fig 6—Double inclined plane shoulder and leg rest for Fowler's position, patient in position

TIME OF OPERATION

The late experience of surgeons is that in those cases in which the patients are operated on after the first twenty-four hours, a majority die, while of those patients operated on within the first eight hours, a majority live Of 162 patients operated on since 1903, whose history I have collected, the time of operation is known in 81 Those operated on within the first eight hours had a recovery rate of 54 54 per cent

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[1] While talking with Dr James M Neff, of Chicago about some device to maintain the patient in the Fowler position he suggested that an apparatus constructed on the principle of the double inclined plane would be ideal Acting on this suggestion I had manufactured by the Weyburn Company, Rockford, Ill, this shoulder rest with double inclined plane extension

The treatment may thus be epitomized

1 Lateral incision through right rectus or linea semilunaris as for appendectomy

2 Systematic search for, and suture of, the perforation

3 Placing of drainage tubes

4 Partial closure of wound without irrigation or mopping in the peritoneal cavity

5 Treatment by posture to confine bacteria and septic material to lower abdomen (Fowler's position)

6 Treatment calculated to destroy or impede the growth of bacteria already in the blood and tissues Antistreptococcic serum, unguentum Credé

7 Supportive treatment Nourishment strychnin and digitalin hypodermatically

8 Elimination Physiologic salt subdermally (temporarily) when indicated for failing heart, proctoclysis continually, until sepsis is overcome

REPORT OF CASE

The case I report is that of my own son and is remarkable in that three laparotomies were performed during a run of typhoid fever of fifty-one days This is the third or fourth case reported in medical literature, I believe, where more than one laparotomy has been performed for intestinal perforation and its sequels in typhoid fever

History—Ernest S A, male, aged 17 The illness began without prodromal symptoms, Sept 27 1905 The first symptom was a severe chill, an hour later the temperature was 103 F, slight epistaxis during first week, on the thirteenth day a slight intestinal hemorrhage occurred Two days later, after an enema was given, the patient was seized with a pain in the lower abdomen, causing him to cry out, at the same time he complained of an intense pain in the penis Perforation was suspected and consultation held Operation deferred Previous to these symptoms the pulse was 98, temperature 100 6 F Seven hours later the pulse was 108, temperature 105 4 F

First Operation—Operation Oct 5, 1905, by Dr Murphy's associate, Dr James M Neff, thirty seven hours after perforation A perforation the size of a lead pencil was found in the ileum, 12 inches above the cecum Perforation repaired, drainage without sponging or irrigation in the peritoneal cavity The patient recovered from this operation A fecal fistula developed at the site of the drainage tube about a week later

Second Operation—Nineteen days later, October 27, a second operation was performed by Dr Neff for suspected pus pocket. A few adhesions among the intestines were broken up but pus pocket was not located Wound closed with rubber drain Patient rallied from the operation well and gradually improved Most of the bowel movement passed through the fistula at this time On November 10 the record shows the patient had had ten days' normal temperature During the forenoon of this date he suffered from a sudden pain in the upper abdomen Some distension in this region and discharge from fistula greatly diminished Intestinal obstruction feared

Third Operation—On November 11 an operation for intestinal obstruction was performed by Dr Neff Incision through left rectus above umbilicus Operation revealed a kinking of the small intestine caused by a fibrous band Obstruction relieved immediately by dividing the band Patient died eight hours later

Autopsy—A partial autopsy was made of the abdominal viscera The fecal fistula was at the site of the perforation in the ileum, the stitches having given way allowing a reopening of the perforation Deep in the left pelvis circumscribed by exudate and adherent coils of intestines an abscess was found containing from four to six ounces of very offensive pus

DISCUSSION OF CASE

It is evident that from the beginning the case was one of virulent typhoid infection This is indicated by the sudden onset of the fever following a severe chill, which was the first symptom of illness Had the patient been operated on within a few hours after the perforation was suspected, I believe there might have been a favorable termination An early operation would have greatly limited septic peritonitis, which caused intestinal obstruction from adhesions

There is one feature in the case about which I have not spoken There was a perforation in the cecum which was plainly visible as this organ lay in the lower angle of the partially closed wound made at the first operation There was no fecal discharge through it, although the semi-solid feces could be seen plugging the opening

Had the case progressed favorably, it is not at all likely that this perforation would have caused any trouble It probably would have healed spontaneously If it had discharged the contained feces, it would have been received outside of the peritoneal cavity The intestinal obstruction should have received earlier surgical attention Yet one may be pardoned for hesitating about entering the peritoneal cavity the third time in the course of typhoid fever

The question of the ultimate termination of the deep pelvic abscess, had life continued, is a more difficult one to decide I am convinced that this was not a pus-pocket resulting from septic peritonitis, but an independent focus of typhoid infection having its origin in a mesenteric gland It was not confined by the coils of intestines, but by a thick wall of exudate in the mesentery region In its location, it was evidently doing no harm, being hemmed in by a protective wall of exudate and possibly the contained micro-organisms had lost their virulency It might have been safely discharged through one of the abdominal wounds

In spite of the late operation for perforation the septic peritonitis had been entirely overcome, for the patient had subsequently ten days of practically normal temperature The management of the case after operation was that described in the text of this paper under treatment

If I have succeeded in any degree in awakening an interest in this subject, that its importance deserves I shall feel that my boy has not lived and died in vain

DISCUSSION

Dr John B Murphy, Chicago, emphasized the time of operation Can one save the patient with typhoid perforation? Yes, if operated on in time No, if one waits until such time as the patient is in a condition that contraindicates operation All of the symptoms indicating operation were, he said, clearly and concisely stated by Dr Allaben, namely, the pain, the local hypersensitiveness, the nausea, the vomiting, the elevation of temperature above that which the patient had before, and, finally, the hyperleucocytosis In a recent epidemic of typhoid in Chicago, the hyperleucocytosis was absent in a considerable number of the cases, while the other symptoms were present almost invariably and in the order mentioned The question of collapse, Dr Murphy said, is the most important one and the most difficult one to eradicate from the average practitioner's mind Collapse has so long been recognized as indicative of perforation in the peritoneal cavity that it is difficult to persuade ourselves that collapse is not an evidence of perforation into the peritoneal cavity but of absorption of an excessive quantity of sepsis produced by the perforation into the peritoneal cavity By waiting for collapse as a symptom indicative of perforation, one will miss the only time when it is possible to rescue the patient from the complication of his typhoid As to the diagnosis Dr Murphy stated that the diagnosis can be made and should be made timely, by observing the symptoms present Then, the diagnosis made, action should be forceful and prompt All surgeons, he said, regret the time when so much was done in the peritoneal cavity in cases of perforation Since then it has been found that disturbance of the peritoneal surface is a detriment Surgeons have learned, furthermore, from the most excellent experiments made recently, that the fluid which Nature throws out into the peritoneal cavity, and which is considered to be pus, is often a prophylactic fluid that saves the patient's life It is known, however, practically, whether the theory is right or wrong, that if that fluid is permitted to remain, as a rule, the resistance in these cases is sufficiently great to save the life of the patient, with the assistance of drainage and with the further assistance of a closure of the perforation It is not sufficient to drain the peritoneal cavity in the presence of perforation of any kind, and this is shown most strikingly in connection with perforation from the duodenum, the most favorable place of perforation as far as septic peritonitis is concerned It was found that in nineteen consecutive cases of perforation of the duodenum in which only drainage was instituted, eighteen patients died immediately and the remaining patient died four or six weeks afterward This is particularly true where the opening in the alimentary canal is low down, where the sepsis of the intestinal contents is greater than in the duodenum, and that is an indication that one should, in this operation, always close the opening

The details of the after treatment Dr Murphy referred to briefly in connection with one statement made by Dr Allaben He gave the details of the after treatment as carried out by Dr Murphy in four typhoid perforations and in forty one consecutive cases of general suppurative peritonitis from perforation of the alimentary tract In these forty one cases there were forty cures and one death These details are important, tiding the patient over the acute hour of sepsis which is immediately after operation, by washing out the blood by means of a large quantity of fluid administered by internal clysis The method of taking it is the most difficult of all things in surgery, to impress on the average nurse or on the average man the manner of using it It must be admitted by pressure alone and through a tube that will let the water flow in and out and the hydraulic pressure must just exceed the abdominal pressure It must not be done by placing the container seven or ten feet above the patient, with a forceps attached to the tube letting the water drop down It must flow freely in and out, and when given in that way the fluid is rarely rejected In the operative treatment, Dr Murphy said, it is very important to do as little work as possible Open the abdomen, find the opening and close it He emphasized the importance Dr Allaben laid on searching the large intestine for an opening One should not go out of the abdominal cavity in a perforative case until the opening is closed, or the time will be wasted and the patient will be lost

Dr L J Hammond, Philadelphia, expressed his belief that it is in the prophylaxis of perforative peritonitis that the hope of lowering the mortality lies Following out this line of thought he has during the past three years endeavored to learn the condition of the abdominal viscera of subjects dying from typhoid fever from causes other than perforative peritonitis and in no instance has he either from postmortem findings or from histories and hospital records of cases been satisfied that a single case of perforation took place in a subject whose bowels were free from adhesions He further demonstrated, to his own satisfaction at least that in every instance of perforation there was pronounced evidence of pre existing disease of the intestines, which was shown by the presence of adhesions more or less extensive and more often found to be the result of present or past appendicitis though in some instances other of the abdominal viscera had been the cause of these adhesions especially those found about the hepatic gastric and splenic flexures From these observations Dr Hammond was led to the conclusion that it is extremely doubtful whether perforation ever takes place from typhoid fever in subjects whose intestines are free from adhesions He thought that Dr Allaben's case confirmed this belief It seems self evident, he said that a bowel anchored by adhesions would suffer perforation where an ulcerative process attacked the glands in its mucous surface, and where it is still further helped along by a general impairment of tissue resistance, as occurs in this grave disease If this position is correct, there is every reason to believe that a very decided lessening of mortality can result from prophylactic treatment Clinicians claim that during the early stage of typhoid fever, that is, up to the seventh or ninth day, there should be no abdominal symptoms, that is, the abdominal symptoms do not appear until the bacillus has become deposited in the Peyer's patches Given a case, therefore, where in the first week of the disease, abdominal symptoms, especially tenderness with distension, are pronounced, it would seem rational to conclude that pre existing disease of the intestines existed, and if a reasonably certain diagnosis can be made, an exploratory incision should be justified for the purpose of removing the cause and freeing the intestines of their adhesions, which should enable them the better to withstand the ulcerative process

The importance of such an operative procedure was most impressively brought to Dr Hammond's attention in the case of a woman, about 30 years of age, whose intestine perforated during the third week of typhoid The operation which was performed a few hours after the diagnosis of perforation had been made, showed the existence of not only a perforation of the ulcer, but a complete rent in the bowel that severed the lumen transverse to its long axis down to its mesenteric attachment and the caput coli, while several knuckles of the lumen were imbedded in the massive old adhesions from pre existing appendicitis In a second case, where a tentative diagnosis of typhoid had been made, the physician was much concerned about the accuracy of his diagnosis because of the continuous and increasing abdominal pain and distension On the sixth day there could be felt to the right of the hypochondrium a mass, which was decidedly tender on palpation The patient was very tympanitic Operation was advised An incision was made under ether anesthesia on the next day The appendix was found firmly adherent posteriorly and there was much agglutination of the coils of the ileum on the right side The appendix was removed, the intestines freed of their adhesions and the patient went through her typhoid fever without complications

One would naturally expect that such an impairment of bowel function as was present in this case, if it did not actually cause perforation, would certainly contribute much toward its occurring There is every reason to believe that when adhesions of the intestines exist, the normal function of the bowel is disturbed through interference with the fecal current and alteration in the circulation both of which should be regarded as distinctly favoring, if not absolutely causing perforation

Dr Willard Bartlett, St Louis said that in three instances he brought the perforated area to the surface and stitched the intestine to the abdominal wall and left a fecal fistula to form, and two of his patients are well now One was hopeless at the time of operation It takes only two minutes to do this, and neither a surgeon nor a hospital is required

Dr Robert T Morris New York thought it worth noting that a patient may sometimes recover after perforation of the bowel in typhoid without operation He has seen one case in which after perforation had occurred, the bowel contents had escaped and had become encapsulated About six months after the patient had recovered from his typhoid he operated for angulation and perforation of the bowel at the site of the old adhesions and found this encapsulated fecal mass Of course he does not believe in waiting for that sort of thing to occur He believes that the quickest thing to do is the best—to make a diagnosis early and bring the perforation to the abdominal wall as quickly as possible Get in and get out Do it all in two minutes

Dr W A Batchelor Milwaukee Wis referred to one case of typhoid perforation which illustrates several points brought out—the early diagnosis and early operation This case occurred in the third week The first symptom to suggest perforation was abdominal pain, occurring about 7 o'clock in the morning The man was operated on at 3 o'clock of the same day in his house, after very careful preparation of the room and the securing of assistants, nurses, etc The perforation was found about eight or nine inches from the ileocecal valve, a small round perforation such as would be made by a 22-caliber rifle bullet After closing the perforation with Lembert sutures, it seemed that the lumen of the gut had been so much encroached on that there was danger of obstruction Dr Batchelor cut out the stitches, took out the threads and made a circular purse string suture, which seemed to close the opening satisfactorily and with a less degree of narrowing of the lumen of the intestine The man recovered, and in the subsequent treatment Dr Batchelor made use of the saline solution, something as suggested by Dr Murphy, but not so much with the idea of washing out the bowel as to bring in nourishment The saline solution was put in by means of a fountain syringe, and the discharging pipe was clamped off The solution was admitted drop by drop and was used constantly It seemed to take the place of nourishment and of drink and worked satisfactorily Another little thing in connection with this was that the anal pipe was a small catheter, on the supposition that anything larger would be expelled, but with a small catheter inserted 16 to 18 size, the sphincter seemed to be very tolerant Dr Batchelor emphasized the two points, the early diagnosis and the prompt and quick operation, and he thinks that the sudden onset of pain and the restricted abdominal motion are the two points one would rest most largely on in making a diagnosis He considers those two symptoms of far more importance than changes in the pulse rate and temperature

Dr J E Allaben, Rockford, Ill, said in regard to the symptoms about which Dr Murphy spoke, that it has generally been considered that those symptoms are caused entirely by the absorption of septic material The experiments of Buxton demonstrate that it is usually not the absorption of septic material but the absorption of large quantities of bacteria, which undergo disintegration in the blood and liberate their endotoxins, producing the symptoms of shock and collapse. Regarding Dr Hammond's remarks Dr Allaben did not see how he had any foundation for saying, so far as this particular case is concerned, that there was intestinal disease previous to the typhoid fever He did not agree to that, because there had been no indications of intestinal disease at any time before the attack of typhoid, and he did not believe that intestinal disease ever existed The perforation undoubtedly occurred from the ulceration of a solitary gland caused by infection from the typhoid bacillus With reference to Dr Fox's patient who died from neglect to open an abscess, Dr Allaben suggested that the case was one of appendicitis complicating typhoid fever The appendix is often infected in typhoid by the typhoid bacillus, and it must be apparent to all that appendicitis may complicate typhoid a simple appendicitis occurring in the course of typhoid That is one of the things one must look for, and operation in such cases is always followed by excellent results Regarding Dr Bartlett's suggestion to stitch the perforation of the intestine into the abdominal wound, he thought that this procedure might be satisfactory if one could be sure that there is but one perforation Other perforations may be present and be overlooked Again, obstruction might be produced by kinking of the intestine In all cases of septic peritonitis, the formation of adhesions is avoided by early evacuation of septic material Adhesions are caused by the advancement of septic peritonitis By operating early, these adhesions are limited

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Surgical Treatment of Goiter—Dr George A Bingham Toronto, in his presidential address before the Ontario Medical Association May 1907 (*Canada Lancet*, July 1907), states that in goiters affecting both lobes his experience has shown that it is not enough to remove one lobe and the isthmus, as cystic degeneration will continue in the remaining lobe It would seem to be safer, after having removed the lobe most affected, with the isthmus to incise the capsule of the remaining lobe and to enucleate every cyst to be found

A CASE OF INFANTILE MYXEDEMA

JAMES FREDERICK CLARKE, M D

FAIRFIELD, IOWA

The case here presented is the fourth of sporadic cretinism brought to my attention in this part of Iowa Such a number found in a limited territory inclines me to the belief that the condition is much more frequent in the United States than is commonly supposed.

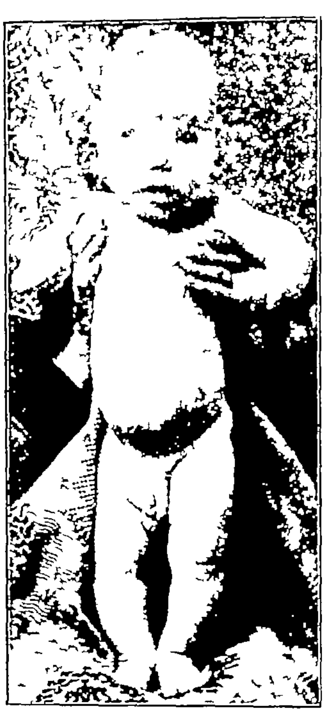

Fig 1—The child at beginning of thyroid treatment March 18 1906

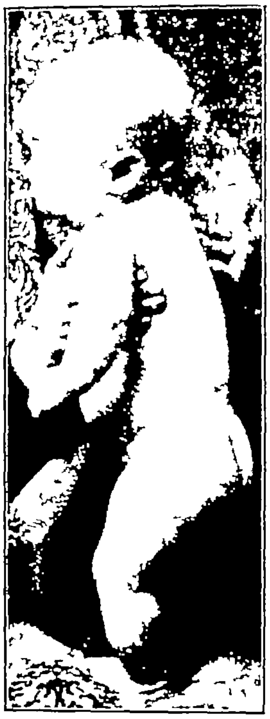

Fig 2—Profile of child March 18, 1906 at beginning of treatment

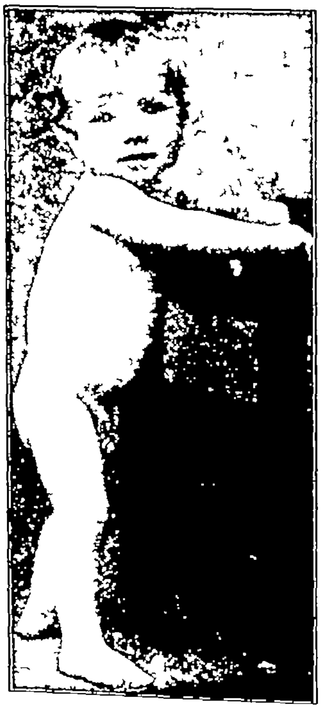

Fig 3—Child after less than seven months thyroid treatment Oct 4 1906

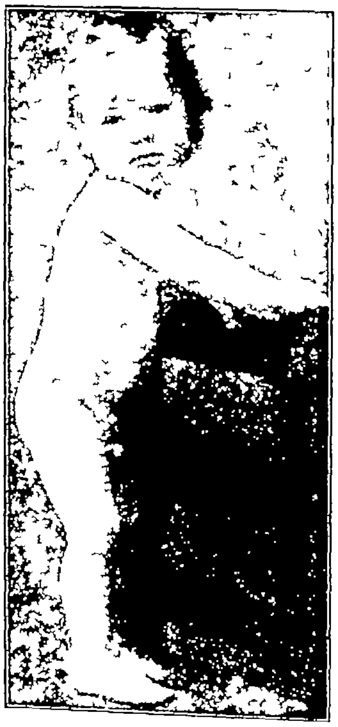

Fig 4—Child after fourteen months treatment May 27 1907

Patient—P Z, male, aged 18 months, was sent to me by Dr C S Bishop of Glasgow, Iowa nosis But, of course, it had been a case of true tubercular joint affection

I could cite many more cases of tuberculous disease of the various joints and bones of the extremities that were successfully treated by me in the course of the last fifteen years, many of which have been presented before various medical meetings Especially gratifying were a number of cases of advanced wrist infection in the young and old, which, when finally cured, compared most favorably with the functional results obtainable by means of resection In fact, some of these cases would undoubtedly have ultimately required amputation of the forearm had the old form of treatment been pursued In two of these cases a cold abscess developed in and between the tendon sheaths of the volar flexors at the wrist, one or more aspirations of the pus plus injections of iodoform-glycerin emulsion (5 per cent), done (under local anesthesia) at the Postgraduate and German hospitals, effected a cure

At the present time, as Dr Schmieden has stated in his address referred to above such cases are treated at the Bonn Clinic with small incision and the application of the glass cup, in addition to the continued use of the elastic bandage However, at the time when my cases called for relief this latter treatment had not been so fully developed as it is now, thanks to the excellent work since accomplished by Bier's foremost collaborator, Prof R Klapp [5]

If the *x*-rays showed great destruction of bone, as in the so-called spina ventosa of the phalangeal or metacarpal and metatarsal bones, or, e g, in tuberculosis of the tibio-tarsal joint, due to primary disease of the astragalus, I have in quite a number of cases operated by opening and cleaning the bones of their tuberculous deposits in the former, or removing the astragalus and excising the tuberculous synovialis of the foot joint by open operation in the latter The often resulting obstinate sinuses then usually yielded in a most gratifying manner to the elastic bandage—lately combined with suction by glass cups—much better than by repeated scraping and cauterization, as formerly practiced [6]

Tuberculous affections below the elbow are treated to advantage with the bandage applied around the arm For the shoulder a special apparatus is needed, as shown by Figures 2 and 3, also taken from Bier's book Its application requires special care, as the elastic ring always encircles the same place and hence is liable to produce pressure necrosis of the skin

Stauungs-Hyperæmie is used by Bier also in all cases of tuberculosis of the lower extremities from the middle of the thigh down, except in cases of tuberculous knee affection with bony adhesion of the patella or subluxation of the tibia Here resection is performed For this conservative treatment is indicated and worth the time and trouble only in cases promising a good functional result, *a movable articulation* being the prime object of the method

For the lower extremities, especially in stout patients the elastic bandage has to be wider, and is best wound over a thin gauze compress or layer of cotton, as otherwise, owing to the tapering form of the thigh, it would be pulled into narrow bands and cause pain

In the beginning, some of the patients with tuberculous affection of the lower extremities may have to be kept in a reclining position, but as improvement advances, they may soon remain up and go about, supported by suitable orthopedic apparatus

It is of greatest importance to immobilize affected joints as little as possible in order to avoid stiffening Gentle, active and passive motions, as long as they do not create pain, should be urged On the other hand the joints of the lower extremities must be carefully protected against overweight As long as they are in the inflammatory stage the patient has to wear supporting apparatus and use crutches or canes He must be cautioned to avoid injury, as traumatism is very apt to again light up the old trouble Of course, the treatment has to be continued for many months (nine to twelve) before a cure can be expected Then, however, the patient will have an extremity that can be flexed at least, to some extent

On the other hand, a resection of the knee, for instance will enable us to discharge the patient often after four to six weeks, cured *but* with a shortened and forever stiff extremity

In tuberculous disease of the smaller bones and joints of the lower extremity supports are not always required In one of my patients, a Swedish woman, now aged 32 years, with a simultaneous tuberculosis of the right shoulder and elbow, I did a resection of the shoulder in October (according to Langenbeck's method) and of the elbow (Kocher) in December, 1897 She got a useful arm and has served as waitress ever since, carrying heavy trays without any discomfort She was presented by me before the New York Surgical Society in February, 1899, and December, 1906 [7]

Lately she called on me again on account of a tuberculosis involving the fourth and fifth tarso-metatarsal joints The *x*-ray showed the condition most beautifully She begged me to try everything before resorting to operation as she could not afford to leave her place and go to a hospital I consented To-day, four months after starting the treatment, she walks without pain and promises well to become cured without operation She has not missed a single day during the entire time She did not wear a splint, but applied the bandage somewhat more forcibly for one hour in the morning and from one to two hours at night, according to Bier's more recent teaching

The fact, established by Bier by experience and observation, that by applications of such short duration a cure may be effected is, of course, a tremendous advantage, especially for the working classes They now can apply the treatment early, before they go to work, and again after their return home, before retiring Bier has shown that such shorter and intermittent, though somewhat firmer, application of the bandage not only is equally efficacious, but even more so, than the prolonged use of the same, the edema which always follows the latter does not set in after the shorter periods of treatment, and the tendency to a breaking-down of the tuberculous focus (abscess formation) and appearance of erysipelas due to such edema is done away with

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[5] In case of bone and joint—as well as glandular disease—in which the tuberculous process has broken down and a cold abscess or sinus has developed the suction cups are almost exclusively used The time of application is forty five minutes per day but not continuous The cup is applied for five minutes then removed for three minutes, viz, it is set to work six times in three-fourths of an hour each day As soon as the originally flabby and pale granulations have become red and firm and the immediate neighborhood of the sinus has become hardened in consequence of the formation of new connective tissue application is made every second or third day and finally only once a week. As to the clinical importance of the appearance of a cold abscess in the course of 'Stauungs Hyperæmie it is to be emphasized that this is not to be regarded as a turn for the worse but as the beginning of improvement If recognized in time and properly treated a cure is often much more speedily effected in these cases than in those in which the tuberculous affection remains closed during the entire course of treatment

[6] With patient perseverance such tuberculous troubles often heal without operation merely by continued hyperemic treatment. Dr Schmieden in his Washington report, referred to some excellent end results obtained without operation also in cases of advanced bone tuberculosis, with or without involvement of the neighboring joint.

[7] See Annals of Surgery 1899 xxx 92 1901, xlv, 150

It is to be regretted that the hip joint, so frequently affected with tuberculous disease, can not benefit from this splendid method But up to the present time no one has succeeded in producing venous stasis in the hip Perhaps American ingenuity will find a way out of the dilemma

As far as hospital attendance of these patients is concerned, it is self-evident that not all patients with tuberculosis of the upper extremities need be admitted They are essentially dispensary cases, and doctors there preeminently ought to apply and favor the method, especially if the diagnosis is established early Those with tuberculosis of the lower extremities ought to enter the hospital, at least for a short time, and be discharged, with proper supports, into ambulatory observation and care or, if possible, sent to the country or seashore as soon as sufficient improvement has set in and the correct application of the bandage has been thoroughly grasped by patient or relatives Of course, *Stauungs-Hyperæmie* is not, and can not be, a panacea, but experience has shown that this conservative treatment is by far the best means at our disposal for tuberculous joints and bones It makes for success in the simplest way and with a minimum of risk At the same time it is connected with the least discomfort to the patient, it reduces his pains, instead of adding to them, and gives him the uninterrupted use of the affected parts, to a greater or less extent

To corroborate some of the foregoing statements by figures, let me refer to Bier's book, in which it is stated[8] that from April, 1903, to August, 1904, 17 consecutive cases of tuberculosis of the wrist were treated at his clinic Of these, 15, 88 per cent, were cured Of 11 cases of tuberculosis of the elbow, 8, 72 7 per cent, were cured, and, of 13 cases of tuberculosis of the foot, 8, 61 5 per cent, resulted in a cure Each of these cases obtained a useful, movable joint, and all remained well at the time of the closing of the statistics, end of August 1905 The hyperemia treatment in these cases was continued over a period of at least nine months, but in not a single instance was resection resorted to

There is no question that the method requires a great deal of study and experience by the individual man Only general rules for its application in the various tuberculous affections can be given, in regard to details, we have to individualize and adapt the method to the given case As with every other therapeutic agent, we must be careful in determining the correct dosage

Thus it may be seen, for instance, that improvement, which first had set in with astonishing rapidity, ceases and no further progress is made In such an event it is time to discontinue the treatment for a while, say from six to eight days

Most remarkable are the results obtainable in the early stages of tuberculous joint affection It is evident, therefore, how important it is that the general practitioner, too should become thoroughly acquainted with the procedure Much hardship may thus be prevented among his patients

In our hospitals, I think, it would be best to establish a separate ward for cases with tuberculous affections of the lower extremities, provided their number is sufficiently large to warrant such special provision to be made for them, and in view of the continuous rotation of physicians and nurses it might be well to have two of the younger men of the staff (best voluntary applicants) to superintend the proper administration of the method during their hospital career In this way only can the best results be obtained, as much time may be wasted and also harm done by the improper application of the treatment

Of still greater importance is such careful supervision in the treatment of

II ACUTE SURGICAL INFECTIONS

if we would have our patients benefit by this astonishingly simple and really wonderful procedure, which Bier, having the courage of his conviction, principally tried in this class of cases within the last three to five years, although he began with its evolution as early as 1893, one year after he had first conceived the idea of applying induced hyperemia for tuberculosis

Just reflect for a moment We are told by Bier to break with all our former iron-clad rules regarding the treatment of these acute troubles, to consider as wrong the time-honored usage of prescribing rest, ice, elevation, and often long incisions with drainage or gauze tamponade The very hyperemia, which hitherto we have been combating with all the weapons at our disposal, he now teaches us to look on as being a teleologic factor, a wise arrangement of Nature, in its fight against the invading foe, which has not to be reduced, but to be increased in order to check or cure the infectious process and its many deleterious sequelæ He certainly has demonstrated beyond the shadow of a doubt that his method is far superior to those formerly in vogue

Where pus has already formed, incisions must, of course, be made, for "ubi pus, ibi evacua," but these incisions need be but small, just large enough to permit of giving exit to the pus, drainage, especially in tendon-sheath infections, can and must be dispensed with if we would save the tendon

Of my personal experience with hyperemia treatment in acute surgical infections, I would here relate the history of but one case

A young physician, 26 years of age, while wrestling, sustained a compound dislocation of the interphalangeal joint of his right thumb Doctors are careless Reduction is done on the spot, and a wet handkerchief wound around the finger Shortly afterward, without further disinfection, a sterile dressing is applied Six days later he comes under my care with an acute periostitis of both phalanges and a suppurating joint, the thumb is very much swollen With our former methods of treatment, I should have rather despaired of saving the finger and joint As it was, I made a short incision on the opposite side of the joint and one short cut, down to each phalanx, dividing the periosteum and avoiding the tendons Immediately, on the operating table, the elastic bandage is applied, and worn for 22 hours out of the 24, interrupting one hour at the end of every half day The pain subsided within 24 hours The temperature, which before had been 102, was normal on the fifth day and the patient discharged on the twelfth, with the finger much improved The time of wearing the bandage was gradually reduced It was applied, in all, for three weeks In the fifth week a small sequestrum formed To-day the finger is healed and motion of the interphalangeal joint is unimpaired No other treatment that I am acquainted with would, I think, have produced an equally satisfactory result.

Further, I have seen most gratifying results of hyperemia by stasis in suppuration of the sheaths of the flexor tendons, best if taken hold of early short incision of sheath over phalanges, to evacuate the pus, no drainage elastic bandage around arm, in injury of the hand, in a boy run over by a wagon, with compound fracture of phalanges and metacarpals, opening of tendon sheaths, undermined, soiled wound in the palm of the hand, where, immediately after the necessary surgical work, the bandage was applied with the patient still on the operating table, and the treatment then faithfully continued especially quick healing and cicatrization, with slight resulting stiffness of fingers, in cases of paronychia abscess incised, prompt artificial stasis, closed in 48 hours, parulic fistula of upper eyetooth with abscess formation over the respective nasal bone, in a young lady eleven hours' stasis, twice every day, with one hour intermission, for a short time, with elastic band around neck cut in face avoided, obstinate tooth fistula of lower jaw, chronic periostitis, intermittent suction with cup for a few weeks spontaneous closure, suppuration due to fascia necrosis, following silver wire suture in Mayo's operation for umbilical hernia (operation by adjunct attending surgeon at German Hospital), formation of a discharging sinus suction with cups, definite closure of wound after a few weeks, suppurative postpartum mastitis small incisions, short drainage tubes, suction, quickly cured with splendid cosmetic result, obstinate furunculosis of face superficial incision of boils, prolonged intermittent cupping cured, acute gonorrheal inflammation of wrist and many others

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[8] Fifth edition, 1907, 271 275.

Lately I have treated a boy of 16 years with fracture of the base of the skull, with artificial hyperemia, elastic band around neck, 22 hours of the 24 starting six hours after the accident, with the intention of thus carrying out a prophylactic treatment against the ever-threatening meningitis in such cases Convalescence was astonishingly rapid It will be interesting to watch the result of this preventive procedure in a series of like cases

It certainly is most interesting and extremely fascinating to read in what a multitude of acute inflammatory conditions hyperemia has already proved useful in the hands of Bier, his associates and followers I will here only mention, besides those just referred to as having occurred in my own practice, the treacherous infections of fingers, toes, hand and foot and their upward advancing inflammations acute and recurring osteomyelitis, acute lymphadenitis parotitis, erysipelas, furthermore, acute mastoiditis, frontal sinus and antral affections, the latter troubles to be treated by means of an elastic band, worn around the neck, with gentle but sufficient constriction to cause stasis without annoyance, furuncles, carbuncles (hyperemia by means of glass cups), etc It would mean making an abstract of Bier's book were I to enumerate all the diseases that have already and are destined yet to be treated by hyperemia Bier himself says

> I believe that the practical use of hyperemia represents the most general and comprehensive mode of treatment in medicine, for I do not know of another remedy that could be successfully employed in so many directions I have described such a variety of different troubles that were subjected to hyperemia that many may think I have gone too far But, on the contrary, I am convinced that this remedy used by Nature in such a profuse measure to combat all sorts of lesions, is destined to be far more extensively used than has hitherto been attempted

In connection with and in corroboration of this statement, I should like to refer, in passing, to a recent report by Vorschuetz,[9] from the surgical division of the Buerger Hosppital at Cologne, Germany (Tilmann), in which are described five cases of cerebrospinal meningitis, four of which were cured by artificial hyperemia of the head and repeated lumbar puncture The fifth almost cured, a child of 2 years, developed symptoms of acute hydrocephalus at the end of the ninth week to which it quickly succumbed

The use of artificial hyperemia in fighting tuberculous, as well as suppurative, cerebrospinal meningitis was first recommended and tried by Bier himself[10]

I would further call attention to the great importance of hyperemic treatment of pulmonary tuberculosis especially the incipient form, by means of Kuhn's lung suction mask consisting of a celluloid cap or hood covering mouth and nose, fitted with an arrangement that can be regulated so as to render inhalation more or less difficult, while exhalation takes place through large valves or free through the mouth[11] In 1903 Bier proposed impeded inhalation by means of compressing the patient's nose and unobstructed exhalation through the mouth in order to produce artificial hyperemia of the lungs Jacobi and Leo had recommended keeping these patients in a pronounced Trendelenburg posture for a number of hours every day

Most encouraging results in this connection have recently been reported from v Leyden's clinic, in Berlin, by Kuhn, as also from the sanatorium of Stolzenburg[12]

Furthermore, I would mention that Bier and his assistants, while using the large glass apparatus for limbering up stiffened joints, incidentally found that these same apparatus, in addition to producing the desired hyperemia, represent a most valuable aid to orthopedic and medicomechanical surgery, much superior to anything so far known

A point that deserves special emphasis is the great value of the hyperemic treatment in a prophylactic sense The earlier it is applied, the more effective it will be found in chronic as well as acute infectious diseases I would here once more refer to the case already mentioned, of fracture of the base of the skull which was treated by me with the elastic bandage wound around the neck, in order to avoid the advent of meningitis, and was apparently benefited by the same

The treatment will also prove of great value in this connection especially to physicians sustaining an injury to the second or third phalanx of the finger, during operation or postmortem examination It will be well for them, after having produced some bleeding from the wound and disinfecting it with acetic acid and putting on a wet dressing and a finger cot, to wind around the base of the finger one of the commonly used rubber bands, in order to produce hyperemia The occurrence of many a phlegmon, lymphangitis and lymphadenitis with suspense of practice for months, may thus often be avoided and many a valuable life be saved Of course, it will depend on the seat of the injury and the depth of the wound (puncture of tendon sheath) whether it will not be necessary to apply the elastic bandage around the arm at once

The results of Bier's treatment, and the multitude of new facts in the therapeutics of every branch of medicine, are so extremely interesting that I feel sure that all who take it up at all will be induced to extend its usefulness by carrying it into new, as yet untried, field- Such continued experimental work will, at the same time, tend to demonstrate the limitations of the method, for it must be remembered, as Bier himself has again and again pointed out, the hyperemic treatment is not a panacea for acute surgical infectious diseases, either It is not, and can not, be beneficial in every case We are only beginning to grasp its possibilities, undoubtedly much has yet to be learned

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[9] Münch med Wochschr, No 11, 1907

[10] See Mittheilungen aus der Grenzgebieten vii 2 3 and his book 1907, Fifth Edition page 382

[11] See Deutsche med Wochschr 1906 27 and Münch med Wochschr 1906 p 1275

[12] Münch. med. Wochschr, April 16 1907

However, what we know as a fact to-day is that Bier has given us a new and most powerful weapon in our warfare against disease He and those who have worked with him along the path pointed out by him have shown that this weapon, handled either alone or in conjunction with slight surgical intervention, enables us to treat many chronic and acute surgical infectious diseases more conservatively and with less discomfort to the patient, and at the same time with by far superior functional results than any other method so far known in medical and surgical therapeutics

In conclusion, let me say that I consider it not only the privilege but the duty of every medical man to study and thoroughly to master the principles of Bier's hyperemic treatment in order to be able to bestow on his patients the great and manifold benefits of this truly wonderful discovery

DISCUSSION

Dr W W Grant, Denver, Colo, stated that his experience with the Bier treatment is confined to a year's work and observation in the treatment of acute and chronic infectious diseases, chiefly bone and joint suppurations, and in acute cases, such as puncture wounds of the extremities He has found it remarkably effective in a number of instances One, a personal experience, was a puncture infected wound of the finger, obtained in operating on the mouth There was pain, rapid swelling and redness of the finger On the next day Dr Grant began to use this treatment, using absolutely no other measures whatever He applied a half inch elastic bandage between the middle joint of the finger and the hand for a half hour at a time, every two or three hours in the twenty four There was an almost instantaneous relief from pain, although the swelling continued. The throbbing ceased, and the finger recovered perfectly in a week, without a particle of suppuration The treatment was continued for only two or three days Therefore, in Dr Grant's opinion, the method is a preventive measure of great importance. He has treated other cases of this kind—cases in which suppuration (a local, if not a more general, infection) was expected, in the same way, with equally good results Two recent cases of chronic infection were considered worthy of record

One patient, a farmer, aged 54, suffered from an osteomyelitis of the left femur, of twenty four years' duration This man had been operated on twice As a result, he had large scars from the packing of the wounds, with a continuation of the suppuration and necrosis Dr Grant used the ordinary methods, removing the dead bone through a long incision and gouging out the pus and débris in the head of the femur, where a large abscess existed There was in this case complete bony ankylosis of the joint The patient had not been operated on for several years The wound was sutured tightly, two rubber drainage tubes were inserted—one in the head of the bone, the other at the upper end of the incision There was marked relief of pain, the bandage being applied every day for an hour to an hour and a half at a time, tight enough to produce distinct swelling, with capillary congestion and some duskiness of the limb This bandage was applied daily for two months The very rapid decrease of the discharge was most marked, the man walked on crutches At the end of forty days he threw away the crutches and walked with a stick, and in less than ninety days from that date the man threw away his stick, the discharge had practically ceased and he had gained 24 pounds Dr Grant said that he had never obtained such a result, in such a case, with the ordinary methods of treatment adopted by good surgeons, either in hospitals or elsewhere.

Another patient, aged 45, had an osteomyelitis of the right femur, of fourteen years' duration Two operations had been performed on him Dr Grant made a long incision on the side of the limb, the joint not being involved He found considerable necrosis extending completely through the shaft of the bone, therefore chiseled it out, curetted it and put a drainage tube completely through the limb from one side to the other, going through the middle of the shaft, the anterior and posterior surfaces being intact This man was treated in the same way as the other patient and with the most gratifying result The wound has healed entirely on the inside A week ago Dr Grant removed the long tube and inserted short tubes on each side down to the shaft Examination showed no denuded bone The discharge diminished rapidly There is no more pain, and the man is making most satisfactory progress, though under treatment but five weeks As the result of his experience, though limited, Dr Grant commended the measure as a worthy addition to our resources

Dr V Schmieden, Berlin, Germany, stated that on his travels through this country, he was greatly pleased to learn that Bier's hyperemia treatment has been tried in very many places, and everywhere he found not only a thorough and full appreciation of the principles underlying the method, but also a complete understanding of the details of its application Therefore, there is no reason to doubt that soon there will be reported from elsewhere similarly favorable experiences as those reported by Dr Meyer

Dr Schmieden emphasized that only moderate and conservative application of the treatment can be of value Too much treatment is as injurious as giving an overdose of a drug The bandage should be applied by one who thoroughly appreciates the objects of such treatment Nutrition should not be interfered with in any way, on the contrary, an increased volume of circulating blood is to be directed into the diseased parts in order to manifest its protecting and healing powers Hyperemia that either causes pain or increases the severity of existing pain is wrong He advised that after having had an opportunity of observing the proper application of the hyperemia bandages and suction glasses, the physician will do well to begin their use in cases of furuncles, chronic fistulas and fistulous tuberculosis of joints (in the latter cases combining the use of the bandage with that of suction glasses) Then the method may be extended gradually to the treatment of acute suppurations, phlegmons, mastitis, etc In the beginning it is advisable to supervise the treatment personally In serious cases and in those attended by fever the patients should be sent to the hospital

Dr John C Hollister, Chicago, said that this treatment is of avail, not so much because of the hyperleucocytosis as because of the hyperopsonization, and the necessity of combining passive hyperemia with surgery depends on the fact that the local opsonic power is increased, therefore, the necessity of combining with surgical methods passive hyperemia and vaccine therapy is greater than the necessity of combining singly the two former Dr Hollister has found that without exception the serum exuding before the application of the cup over the diseased center was below 1 (i e, 0 5) After the intermittent application of the cup for from one half to three quarters of an hour, according to the directions given by Bier, the opsonic index of the serum exuding from the diseased area is raised toward that of the general circulation This has been found to be true in cases of tuberculous glands of the neck, of tuberculous fistulas and of staphylococcic abscesses

If, then, the local opsonic index is raised by the application of the cup, is it not absolutely indicated that one raises not only the local but also the general opsonic index? If the opsonic index of the general circulation is below normal, raise it by means of vaccines and then draw by means of the cup into the diseased area this serum with its higher opsonic power For instance A small boy with tuberculous glands of the neck had one broken down gland His opsonic index, general circulation, was 8, local opsonic index, of serum of neck before cupping was 4 After the application of the Bier cup the local index was 7 Both general and local indices were then raised and maintained above 1 by means of vaccine therapy and local hyperemia The boy is steadily improving without any more glands breaking down and most of many affected glands have disappeared The only purely surgical measure that was done was to make a small puncture to let out the pus and later a curette was used to loosen a final shred of necrotic capsule A small bluish punctate star is the only remaining evidence of interference The general condition of the patient has improved very markedly and steadily

Dr Frank Smithies, Ann Arbor, Mich , said that whenever any new form of treatment is announced there is apt to be over enthusiasm, and that this may bring about serious consequences Several years ago he became interested in the published reports of the marvelous results obtained by Bier and others in the treatment of joint affections by passive localized hyperemia The reports at that time were rather premature and the details concerning the management of the cases were not complete Since then, however working along the lines set down by Bier, he has found results in the main to be as so ably set forth by Dr Meyer He has been particularly interested in the treatment of joint affections, both acute and chronic While in the majority of instances the results had been favorable, yet he felt that there are so many factors to be considered in the treatment of any given case by the passive stasis that to secure the best results the therapy must be directed by an experienced person Herein lies the great danger of recommending the method for use outside institutions, where supervision can not be had over cases He emphasized the fact that in many cases the method is merely an adjunct to treatment along other lines All other forms of treatment, such as drainage of pus, the aspiration of fluid, etc , must be carried out If this is not done the treatment will prove of little value In certain of the joint affections, such as chronic progressive arthritis deformans or chronic rheumatism, measures have to be instituted to counteract the anemia which is so common The iron or the arsenic should be pushed at the same time that the stasis is being used Many of these patients are much emaciated In that event the use of the protective bandage underneath the rubber onstricting bandage must never be neglected Moreover, the mb must be in proper position It should not be allowed o hang down, it should be level or slightly elevated These patients are consequently best treated in bed The cotton supporting bandage peripheral to the part being treated must always be applied If this is not done, patients fail to get the benefit of the stasis at the affected part Dr Smithies has seen troublesome and long persisting edemas follow failure to use this supporting bandage In several cases of arthritis deformans these edemas appeared to become more easily produced as the treatment of the cases progressed Rest from stasis, with elevation had proved, in his experience, the best method of treating the edemas He has also noted several instances where severe peripheral neuritis followed prolonged treatment by the Bier method In two instances marked effusion into joint capsules supervened after several weeks' treatment One should also inquire carefully into the other conditions of a patient The age and the general state of nourishment must be considered Old people and arteriosclerotics are bad subjects for stasis Very young children must be watched carefully under treatment Diabetics or patients with essential anemias should not be treated, especially for chronic affections Patients with chronic heart disease are best let alone

Concerning the length of time that the constricting bandages should be left in place, Dr Smithies stated that his experience is in line with that of the majority of users of Bier's method In general, chronic cases do well with rather strong constriction maintained for from one half to two hours twice daily The patients seem to do better if the length of time of application is increased gradually during the first fortnight He has always had these patients massaged with warm olive oil after removal of the constricting bandages In acute cases mild constriction maintained for from five to twenty-four or more hours, has given good results in his hands He is very careful about recommending this method of treatment in cases with abundance of free pus, on account of the danger of a general septicemia following the removal of the constriction In all cases the condition of the patient must guide one in the application of the stasis At the first appearance of bad effects, such as edema, peripheral neuritis or effusions into capsules, the treatment must be stopped until the tissues regain their vascular tone As to the causes of the wonderful results sometimes following the use of hyperemia, he thinks that too little experimental work has yet been done The work of Dr Hollister along the lines of increase in local opsonic power of the blood serum he declared appears very promising This was suggested by several observers some two years ago, but he has seen no definite tabulation of results prior to that of Dr Hollister's, although he has noted the increased opsonic power in one case in his own experience

Dr John B Roberts, Philadelphia, suggested that inasmuch as the irritation of the skin is due to the difficulty of getting ventilation on account of the rubber bandage, why not use elastic webbing? A pair of suspenders could be used

Dr Willy Meyer, New York, said that any one who has practiced the hyperemic treatment for some time will have made so many interesting observations that he could talk about them for hours and hours There is much that is new and fascinating Dr Hollister, he said spoke of the opsonic power being increased It certainly is most difficult to go into the theory of the hyperemic treatment, but Bier himself emphasized that it is better to say that the blood is doing it, and not go too much into the theory of the thing The pathologists have brought forward so much that it is most difficult to say what is right and what is wrong At present, we must say that the effect of the treatment is dependent on the greater amount of blood The physiologic effect is so complicated that it will be a long time before the truth about it will be known Dr Meyer said that he was especially interested in the remarks of Dr Grant, because he referred to the prophylactic use of the hyperemia treatment It is well known what may happen to the surgeon in consequence of an injury sustained during an operation on a septic patient, the pathologists also often suffer in consequence of some slight abrasion sustained during the conduct of a postmortem examination Dr Meyer knows of three prominent surgeons of New York who were seriously sick for months with pronounced lymphangitis and lymphadenitis in the axilla In these cases, particularly, the preventive treatment by means of Bier's method will be very useful Dr Meyer always carries in his pocket a number of finger cots and small rubber bands As soon as an injury to the region of the second or third phalanx of the finger has occurred during an operation, he squeezes out the finger and applies acetic acid But that is not all one can do It is of importance to dress the small wound with some moist gauze and to slip over the injured finger a finger cot and over the cot one or two small rubber bands, placing them at the base of the first phalanx so as to produce a slight hyperemia The pain soon ceases and small wounds heal rapidly in a few days, without producing any lymphangitis In the case of fracture of the skull, Dr Meyer debated before starting the treatment whether it was advisable to use a bandage around the neck and produce a hyperemia within the cranial cavity He could not prove absolutely that the boy had a fracture of the base of the skull, but he is convinced that every one would have diagnosed his case as such He fell down about twenty feet, was picked up unconscious, vomited blood three times and had great tenderness on pressing the region of the supposed fracture

Referring to the remarks made by Dr Smithies about over-enthusiasm, Dr Meyer said that for fifteen years we have heard again and again one of the most capable and impartial observers write on his own discovery, and many others have seen what an amount of good this treatment is able to do If there has been any enthusiasm shown, it must have been stimulated by the excellent results observed But it must be borne in mind that medical men are only commencing to realize what is in hyperemia, and what it can do when made use of rightly There are three methods the use of the bandage, the cupping glass and hot air, and one must learn to ascertain the proper indication for the use of the three.

THE PRINCIPLES OF VACCINE THERAPY

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LONDON, ENGLAND

(*Concluded from page 487*)

CONDITIONS WHICH OBTAIN IN THE FOCI OF BACTERIAL INFECTION

We may conveniently begin with the study of the conditions which obtain in foci of bacterial infection I have already pointed out that the foci in which bacteria cultivate themselves are in every case "foci of lowered bacteriotropic pressure," and that the deficit of antibacterial substances in such foci can be accounted for by the facts that bacteriotropic substances are absorbed whenever blood fluids come in contact with bacteria, and that in the case of foci which are cut off from the blood stream the conveyance of bacteriotropic substances to the focus of infection by the lymph stream can only rarely keep pace with the absorption This premised with regard to the conditions which are common to all bacterial foci, I may conveniently direct attention to special conditions which obtain in infections of serous membranes where serous effusion has taken place, in abscesses, in sinuses, and in association with brawny swelling of the subcutaneous tissues

(a) *Conditions Which Obtain When Bacteria Are Growing in or in Contact with Serous Effusions*—These are well shown in tuberculous peritonitis Here as Douglas and I have already shown, the ascitic fluid has in every case a much lower opsonic index than the circulating blood It follows that the bacteria which are cultivating themselves in, or in contact with, such ascitic fluid are not exposed to the full bacteriotropic pressure of the circulating blood We have here an explanation of the success which has attended tapping and in particular laparotomy in tuberculous peritonitis That success is satisfactorily accounted for by the replacement of a stagnant lymph which has forfeited much of its antibacterial virtue by a fluid of higher efficacy freshly derived from the circulating blood Manifestly we should be neglecting a very important element in the treatment if while aiming at the destruction of bacteria in serous membrane by processes of immunization, we were to fail to take into account the fact that the bacteria which are the object of our attack are cultivating themselves under a lowered bacteriotropic pressure

(b) *Conditions Which Obtain in Abscesses*—In abscesses the conditions are more complicated Here must be taken into account not only the absorption of bacteriotropic substances by bacteria, but also another factor which does not come into consideration in the case of ordinary serous effusions This factor is the liberation of a tryptic ferment from the leucocytes Such liberation occurs, as Opie has shown, whenever these formed elements disintegrate in pus Let us note that we have here a factor which may well explain the paralysis of all phagocytic effort which sooner or later overtakes the leucocytes in every focus of suppuration, and which continues to affect them even when they have been brought in contact with bacteria in the presence of normal serum It thus appears that as soon as bacteria have grown and leucocytes have disintegrated in an abscess in numbers sufficient to abolish the opsonic and antitryptic power of the surrounding fluid, not only the normal bacteriotropic defense but also the leucocyte defense is thrown out of gear I have neither the time nor the data to discuss certain important but incidental issues which suggest themselves in this connection, in particular the issue as to whether the liberation of tryptic ferment in the abscess—which Opie has brought into association with the destructive and burrowing action of pus—may not also account for the frequent sterilization of the contents of an abscess It is, however, incumbent on me to point out that when aiming at the destruction of the bacteria in an old suppurating focus by the agency of opsonins and leucocytes, and at the same time at the safeguarding of the tissues from the digestive power of the pus, it would be futile to attempt this task without making provision for the replacement of the tryptic and non-opsonic pus fluid by an antitryptic and opsonic fluid freshly derived from the circulating blood

(c) *Conditions Which Obtain in Sinuses*—The conditions with which we have to deal in a sinus when that sinus is freely discharging pus are, I take it, essentially similar to those which prevail in an abscess which is discharging without emptying itself In other words, there is pus fluid which possesses a low opsonic power, and which exerts on the tissues a digestive effect—a digestive effect which makes itself manifest to the eye in the case of a discharging sinus in the sodden and unhealthy appearance of the skin in the neighborhood In the case of a sinus without discharge we have to deal with conditions which might be compared to those which would obtain in a well if the water which originally flowed into it had deposited an insoluble element in such a manner as to choke up all the conduits of supply We can easily conceive how, on the walls and floor of such a well, forms of life might maintain themselves which would be quite incompetent to penetrate into the surrounding soil, or to hold their own in the face of a copious inflow and overflow of water A dry sinus is, if I understand the situation aright, analogous to just such a choked well, the obstacles to the inflow of lymph being, on the one hand, the density of the granulation tissue, and, on the other hand, the lining membrane of fibrin which clothes the walls of the sinus If I am right in thinking that these are the conditions under which bacteria maintain themselves in a sinus for the dislodgment of the bacteria something more is needed than a mere increase of the bacteriotropic power of the blood and circulating lymph

(d) *Conditions Which Obtain in "Brawny Swelling"*—Next in order we have to consider the condition in which there is a focus of bacterial growth in tissues which are affected with "brawny swelling" I consider that in brawny swelling we have conditions which are, in the respect that the bacterial growth is cut off from the blood and lymph stream, analogous to those which have just been under consideration in connection with sinuses It is in the nature of a minor difference only that in brawny swelling the bacterial growth is isolated from the blood and lymph stream by the clotting of the lymph in the lymphatics, while in the case of a dry sinus the isolation of the bacteria is brought about by the clotting of the lymph on the surface of granulation tissue

THERAPEUTIC PRINCIPLES WHICH EMERGE FROM CONSIDERATION OF CONDITIONS IN A BACTERIAL FOCUS

A strict regard for the logical development of my subject matter would perhaps dictate that at this point I should embark on the study of the phenomena of autoinoculation, reverting afterward to the consideration of the therapeutic measures which may be employed for dealing with the difficulties which are created (a) by the absorption of bacteriotropic substances in the bacterial focus (b) by the liberation of tryptic ferment that takes place there when leucocytes are broken down, and (c) by the blocking of the lymph channels It will perhaps be more convenient, however, if I discuss the therapeutic measures by which we may deal with these difficulties while the situation which we have in each case to confront stands out clearly before your minds The general principles which ought to underlie all our therapeutic measures are the following

1 We must provide for the conveyance of bacteriotropic substances into the focus of infection

2 In case an accumulation of stagnant fluid in the focus of infection effectually prevents the entrance of bacteriotropic substances, as a preliminary measure we must draw off the fluid which occupies that focus

3 In case there are other obstacles to the free streaming of lymph through the focus of infection we must remove those obstacles

(a) *Conveyance of Bacteriotropic Substances Into the Focus of Infection*—The douching of the focus of infection by a stream of lymph drawn fresh from the blood vessels, when the tissues are uninjured and the lymphatic channels are open, can be effected by determining by the agency of heat or any other rubefacient a larger blood supply to the region affected It can also—as in Bier's method—be effected by backing up the blood in the veins in such a manner as to increase the hydraulic pressure in the capillaries

(b) *Removal of Stagnant Fluid from the Focus of Infection When This Prevents the Lymph Finding Proper Access to the Infecting Bacteria*—In case the lymph can make its way effectively through the focus of infection, permeating every part of it, access of the bacteriotropic substances to the infecting bacteria will manifestly be provided for by the activation of the lymph stream quite apart from any operative interference In such a case the stagnant fluid which occupies the bacterial focus will be driven on into the general circulation by the *vis a tergo* of the activated lymph—whether for good or for ill we must afterward consider When this method of dispersion is inapplicable or when for any reason it is contraindicated, the evacuation of the stagnant fluid by operative measures will obviously be desirable In case there is in an abscess a tryptic fluid which is actively eating its way into the surrounding tissues,[7] such evacuation will not only be desirable, but imperative

When we elect to employ the method of evacuation as distinguished from the method of dispersion, our choice will lie between simple incision, incision followed by dry cupping—as advocated by Klapp—and evacuation by aspiration This last method has, I submit, an advantage over all others, as it does away with all scarring and minimizes the risk of the entrance of bacteria from without and the risk of autoinfection of the edges of the wound It also secures more effectively than any method of incision and drainage what is in the case of an abscess the obvious desideratum, to wit, the filling up of the evacuated cavity with an antitryptic and opsonic lymph which will both arrest further digestive destruction and inhibit bacterial infection

(c) *Removal of Obstacles to the Free Streaming of Lymph Through a Focus of Infection*—We have seen above that a deficient outflow of lymph and the formation of a lining of fibrin on its walls are favorable to the survival of microbes in a sinus I am accustomed to combat these conditions by introducing into every dry sinus a solution of 0 5 per cent citrate of soda and 10 per cent sugar (or in lieu of this a solution of 0 5 citrate of soda and 5 per cent sodium chlorid), supplementing this treatment when necessity arises by Klapp's system of dry cupping It will be understood that the citrate of soda prevents coagulation and scabbing by decalcifying the lymph, and that the sugar or salt, acting by osmosis causes fluid to transude from the blood vessels Under the influence of these applications a clear lymph begins to well out from the previously choked sinuses and the local conditions rapidly improve The situation in brawny swelling of the subcutaneous tissues being, in the respect that the lymph stream is arrested, essentially similar to those which have just been considered, it must be treated on the same principle In this connection I may perhaps make brief reference to a case of Ludwig's angina which recently came under my observation

History—The patient, a middle aged man, had in the first instance developed what was taken for an indolent furuncle in the parotid region When after considerable delay this was incised no trace of pus was met and the tissues were found to be everywhere dry and infiltrated They remained in this condition and the wound showed absolutely no disposition to heal Two weeks later, the patient, who till then had been taking out door exercise, was suddenly taken seriously ill, and the brawny swelling which up to that time had been limited to a patch on the left cheek, spread rapidly round under the jaw from one ear to another

Surgical Treatment—A surgeon now carried a series of vertical incisions deep down into the indurated tissues Twenty four hours afterward the patient had lapsed into a condition of low delirium and the local conditions showed no signs of improvement When I saw him I could not, even at the bottom of the gaping incisions, find sufficient moisture to fill the loop of a platinum needle Film preparations obtained by pressing cover glasses against the sides of the wound showed abundant streptococci and only here and there a leucocyte Blood drawn from a vein at the elbow with the intention of making a culture clotted *instantaneously* in the syringe

Other Treatment—It was immediately clear that what was most urgently required in this case was not that further means of antibacterial defense should be furnished to the patient, but that such means of antibacterial defense as were already at his disposal should be brought into application on the streptococci in the focus of infection With a blood so viscid and coagulable as was that of this patient it was inconceivable that any lymph should transude into his tissue It was conceivable also that any transuded lymph should not clot in his lymphatics Influenced by these considerations large doses of citric acid were prescribed, 60 grain doses being administered every three hours Six hours after the first dose had been taken, lymph began to ooze into the wounds, and by next morning all the wounds had begun to bleed The administration of citric acid was then suspended A culture of infecting microbes having now been obtained the opsonic index of the patient's blood was determined That opsonic index working out at 1 8, and very distinct amelioration having taken place in the patient's symptoms, inoculation treatment was postponed There was not afterward any occasion for immunizing intervention, the patient making continuous and rapid progress to complete recovery

There is, I think a lesson in this case which we shall do well to take to heart in conditions of brawny swelling

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[7] It is perhaps worth noting that the fact that an abscess gives fluctuation does not by any means furnish sufficient warrant for concluding that it contains a tryptic fluid and that operative measures must be resorted to Again even when the contents of an abscess by the disintegration of leucocytes have already acquired tryptic powers it may still be practicable to abolish that tryptic power and to effect resolution by leading into that abscess cavity a sufficient quantity of antitryptic lymph.

AUTOINOCULATIONS

Up to the point at which we have now arrived the reaction of immunization has been considered exclusively in relation to the incorporation of bacterial vaccines A moment's consideration will make clear, however, that where, in association with a bacterial invasion of the organism, bacteria or bacterial products pass into the general lymph and blood stream intoxication effects and immunizing responses similar to those which follow on the inoculation of bacterial vaccines must inevitably supervene You will by this time have realized that it must be by the agency of such autoinoculations that Nature achieves curative effects in bacterial infections You will have realized also that the man who proposes to combat infections by methods of immunization must needs be familiar with the conditions under which autoinoculations occur and with their effects on the organism In the absence of such familiarity the physician will inevitably lose his way when he sets out to supply the place of autoinoculations by artificial immunization, or, as the case may be, to collaborate with Nature—by supplementing her autoinoculations by his inoculations —or to place a check on Nature's autoinoculations when these are overtasking his patient's powers of immunizing response

(a) *Types of Infection and Conditions in Which Autoinoculations Occur*—We may conveniently begin by enquiring in what types of bacterial infection and under what conditions autoinoculations take place You will, of course, immediately discern the position of affairs in the contrasted types of generalized and strictly localized infections which were considered in connection with the expectant method of treatment In the former class of infections autoinoculations are occurring in continuous series, in the latter they are conspicuous by their absence In the type of localized infections which are associated with intermittent constitutional disturbance we have a class of infections which is intermediary between the other two, in the respect that there is here intermittent autoinoculations The autoinoculations which have been in question up to this point are, let it be noted, what we may speak of as spontaneous autoinoculations in addition to these we have also a class of artificially induced autoinoculations

Taking our departure from an observation by my collaborator, Dr J Freeman, which had reference to an autoinoculation induced by the massage of a gonococcal knee at St Mary's Hospital during the last twelve months, we have made a systematic study of the conditions under which autoinoculations can be produced in persons affected with localized bacterial infections We have been able to show that autoinoculations follow on all active and passive movements which affect a focus of infection and on all vascular changes which activate the lymph stream in such a focus Evidence has been obtained of the production of autoinoculations by massage and operations affecting tuberculous glands, by passive extension, massage, and surgical operations affecting tuberculous and gonococcal joints, and by scrapings in tubercular caries and staphylococcal osteomyelitis

Evidence has been obtained of the production of artificial autoinoculations in phthisis both by the agency of respiratory efforts and in an ordinary routine examination of a patient by percussion and auscultation We have also in a laryngeal affection seen an autoinoculation supervene on reading aloud Again we have obtained evidence that autoinoculation may follow on walking exercise in the case of patients affected with tuberculous disease of the bones or joints of the lower extremity or with severe tuberculous epididymitis We have also obtained evidence that in the case of patients with spinal caries, autoinoculations are induced by a change from the recumbent to the sitting posture and from the sitting to the erect posture Lastly, we have evidence that autoinoculations are produced both by active and passive hyperemia (hot fomentations and Bier's bandages) to limbs affected with tubercle

ASSISTANCE WHICH CAN BE OBTAINED FROM ARTIFICIAL AUTOINOCULATIONS IN THE DIAGNOSIS OF OBSCURE CASES OF LOCALIZED INFECTIONS

Let me digress here from the consideration of the therapeutic problem to consider the assistance which may be derived from the induction of artificial autoinoculation when a problem of diagnosis confronts us Rightly understood, all methods of bacteriologic diagnosis in which we arrive at the nature of the infection by a process of induction from a determination of the bacteriotropic constituents of the blood are methods which have as their aim the detection of the changes which are produced in the blood by the agency of autoinoculations The following three examples will suffice to make this clear The agglutination test in typhoid fever, whose authorship was claimed by Widal on the plea that the increased agglutinating content of the serum was something other than the result of an immunizing response evoked by an autoinoculation, is now by common consent recognized to be a test which depends—as Gruber and his collaborators, Durham and Grunbaum, maintained from the very first—on the detection of products of immunity produced in response to an autoinoculation "The thermostabile opsonin test," whose diagnostic value was first demonstrated by Douglas and myself, furnishes, in like manner, evidence of an immunizing response to a foregoing autoinoculation or, as the case may be, to an inoculation of the corresponding bacterial vaccine Exactly the same thing holds true of the "absorption of complement test" recently so extensively exploited by Wassermann

It will be clear that in all these cases diagnosis has, perforce, to wait on the immunizing response to spontaneous autoinoculation And such spontaneous autoinoculation may be indefinitely deferred, as we have seen in localized infections It, therefore, marks a definite step in advance when we come to realize that, in case the focus of infection is accessible, we can supply the place of the spontaneous autoinoculation which makes default by the induction of an artificial autoinoculation Up to the present, from the induction of autoinoculation by the agency of massage or active muscular movement and the associated measurement of the opsonic index before and after such active and passive movements, we have obtained diagnostic results which in every case have been borne out by the subsequent history I would note here—for it is germane to the subject matter under discussion—that we have had recourse to autoinoculations associated with measurements of the opsonic index, not alone for the preliminary diagnosis of a bacterial infection, but also for the purpose of obtaining information with regard to the progress of the patient When an artificial inoculation can no longer be induced in a focus which previously could be influenced, we are entitled to conclude that the focus is extinct When an autoinoculation can still be induced, we may be assured that the focus is still aglow,

DISCUSSION OF THE COMPARATIVE MERITS OF TREATMENT BY INDUCED AUTOINOCULATIONS AND TREATMENT BY THE INOCULATION OF BACTERIAL VACCINES

It has, I take it, come home to us all that we have in spontaneous autoinoculation, in artificially induced autoinoculation and in the inoculation of bacterial vaccines, the three great agencies by which immunizing responses are evoked in the organism.

Comparing first the immunizing effects which are achieved by autoinoculations taken generally, with those which are achieved by the inoculation of bacterial vaccines, it may, I think, be stated with confidence that the former method of immunization is far more-expensive in the respect that the patient obtains a much smaller yield of protective substances for an equivalent of intoxication. A number of other considerations come into account when we have to elect between treatment by artificial autoinoculations and treatment by the inoculations of bacterial vaccines.

First in order comes the question of an eventual risk of disseminating living bacteria in the organism. It will be appreciated that the employment of autoinoculations—since here, of course, living cultures are exploited—can never be entirely dissociated from this risk. Such risk falls entirely out of account when we operate with sterilized bacterial vaccines. Next in order of importance comes the question of dosage. It will be plain that in all autoinoculations we operate not only with the living cultures, but with unmeasured doses. When we have to deal with a very considerable focus of infection, or, failing this, when, in a smaller focus, the irrigation of the focus with lymph is searching and unduly prolonged, an excessive dose of the bacterial products will be washed into the general blood and lymph stream.

When, on the other hand, we have to deal with a small focus of infection, or when, in the case of a larger focus, irrigation with lymph is continued for too short a time, too small a vaccinating dose will come into application. Again, when by reason of a gradual restriction of bacterial growth effected by immunization, or when by reason of a repeated draining off of bacterial products under the influence of Bier's treatment or of massage, diminishing quantities of bacterial products are available in the focus of infection, there will come into application diminishing doses of vaccinating elements, while there might be required for the maintenance of adequate immunization reactions undiminished or, as the case may be, increasing doses of these elements.

Lastly, we have to keep in view, on the one hand, the fact that methods of autoimmunization are applicable only in the case of foci which are superficially situated or foci which are situated in the extremities, and on the other hand the fact that the demands which are made on the patient's time and the work which is thrown on the controlling physician, in the case in which autoinoculation methods are employed, are much more serious than in the case in which inoculations with measured doses of bacterial vaccines come into application.

Let it be noted, in conclusion, that the issue as between treatment by autoinoculation and treatment by the inoculation of bacterial vaccines which has just engaged our attention reveals itself, on consideration, to be to some extent an academic issue. Whether we set out to activate the lymph stream on purely empirical principles as Bier does with his bandaging and the ordinary surgeon with his hot fomentations and his massage or whether as "immunizators" we employ these methods with the sole intent of conveying the bacteriotropic substances from the blood into the focus of infection there will in each case be achieved in addition to the local effect which was in view an unsought artificial autoinoculation. Unintended beneficial clinical effects are not infrequently obtained in connection with Bier's treatment in the form of an amelioration in bacterial foci remote from the seat of application of the bandage. In massage of gonorrheal joints I have also seen such unintended effects both in the form of amelioration and in the form of aggravation of the condition of untreated joints.

It equally holds true that, whether we set to work on purely empirical principles to evacuate an abscess, to tap a serous effusion, or to apply massage, or whether, as "immunizators" we apply a Bier's bandage, or massage or any similar device, thinking only of its autoinoculating effect, there will in each case be achieved in addition to the particular effect which was aimed at, also an influx of antibacterial substances into the focus of infection.

MAY INOCULATIONS OF BACTERIAL VACCINES BE UNDERTAKEN IN THOSE TYPES OF BACTERIAL INFECTIONS WHICH ARE ASSOCIATED WITH SPONTANEOUS AUTOINOCULATIONS?

When the question as to the possibility of inoculating bacterial vaccines with safety and advantage to the patient in septicemic infections, and in general in those types of infection which are associated with spontaneous autoinoculations, comes up for discussion we are confronted with the *a priori* objection that, inasmuch as the vaccinating bacterial products are already circulating in the blood, producing an intoxication, it would be plainly irrational to expect from the incorporation of further bacterial elements anything more than aggravation of that intoxication.

To this argument two different rejoinders can be made. On the one hand the objector may be met with the favorable results of actual experiments in which bacterial vaccines have been inoculated in septicemic infections. On the other hand, an endeavor may be made to bring it home to the objector that resource to the inoculation of bacterial vaccines in septicemic conditions is not the irrational proceeding which it might at first sight appear.

I may conveniently here address myself to this last task, leaving for future consideration the results which have been actually obtained by inoculation in septicemic disease. Let me hark back to what was said in an earlier part of this lecture on the subject of the probable place of origin of the antibacterial substances. If I am right in supposing that the bacteriotropic substances are manufactured locally in the tissues, it will be obvious that the conditions for successful immunization will be less favorable when the vaccinating elements are thrown into the circulating blood than when they are inoculated directly into the tissues. In the latter case they will come into application on the tissues in a concentrated form, while in case they are introduced into the circulating blood they will come into application on the tissues only after they have been diluted by the whole volume of that blood. It is accordingly not irrational to assume that there would be a possibility of a septicemic patient deriving in this respect advantage from the inoculation of bacterial vaccines. Let us suppose it granted that from the point of view of his immunization such a patient might derive advantage. There would still remain the objection that the inoculation of bacterial vaccines might aggravate his intoxication. The rejoinder to this objection is, I think, suggested by the consideration that local toxic effects on the tissues, such as we know are produced by the subcutaneous inoculation of vaccines, and a local elaboration of bacteriotropic substances, such as we infer to follow on inoculation, would be inexplicable apart from a holding back of the toxic substances in the tissues. Conformably with this, a much smaller intoxication effect would result from the incorporation of an aliquot quantity of vaccine into the tissues than from the inoculation of that same amount of vaccine directly into the blood stream.

I would put it to you, in view of these considerations, that the question as to whether vaccine therapy can or can not be successfully employed in septicemic diseases is a question which ought to be approached without bias and one which can be decided only by experiment.

RESULTS WHICH HAVE BEEN ACHIEVED BY VACCINE THERAPY

With this discussion I have at last brought to a close my exposition of the main principles of vaccine therapy, so far as these are at present clear to me. I will say, in conclusion, one or two words on the subject of the results which have been achieved by the application of this method in actual practice.

The evidential methods which an author can employ to establish the efficacy of a new treatment are, as consideration will show, the following:

(a) He can publish examples of refractory cases successfully treated.

(b) He can publish, when such become available, examples of desperate cases successfully treated.

(c) When he has treated a sufficiently large number of cases, he can publish the complete series, giving the particulars of each case and the results of the treatment.

(d) If he should be fortunate enough to enlist the interest of other workers, he can commit it to these to furnish definite proof of the efficacy of his method.

Let me try to bring out the strength and weakness of each of these methods.

The value of a number of refractory cases successfully treated lies in the fact that when success has been achieved in connection with a number of such cases the idea that the results can be due to spontaneous cure may be dismissed.

There always attaches to this class of evidence, however, a possibility of doubt, inasmuch as, even when the author is citing a consecutive series of successful cases, the reader will find a difficulty in believing that these were typical cases. He may incline to the view that all the cases cited may have been exceptionally fortunate ones in which Nature was good enough in each case to effect a spontaneous cure.

When the author has cited desperate cases successfully treated somewhat similar criticisms apply. It will be manifest that if the cases cited are in point of fact, as he deems them to have been, cases in which a cure could not possibly have been effected by the unassisted efforts of Nature, the successful outcome of these cases furnishes complete proof of the efficacy of the treatment. It must always be borne in mind, however, that in the absence of the evidence of his own eyes to the desperate condition of the patients, the reader may find it easier to believe that the author was mistaken in regarding his case as desperate than to believe that the treatment can have been effectual in desperate cases.

Quite other are the criticisms which would apply to a statistical record of the result of treatment in a consecutive series of cases. I think that it is not open to doubt that, apart from any incidental value which it might derive from the inclusion of refractory or desperate cases, such a register of cases would acquire value only if it were placed over against a register of similar control cases.

Now a series of untreated cases such as would serve the purpose of controls can not be obtained in practical life. For such a series of untreated controls there would have to be substituted, therefore, as the only possible alternative, a series of cases treated by another method and another practitioner. Now if this were done the scientific issue would immediately be confused, not only by doubts as to the comparability of the two series of cases but also by the question as to whether the alternative method was hurtful or beneficial, and, above all, by the question of personal competition. If you will consider what confusion would be introduced in this way in the issue which we are here concerned to resolve, you will, I think, understand the motives which influence me when I say that I do not purpose, either here or elsewhere, to supplement by any attempted statistical proof that presumptive proof of the efficacy of vaccine therapy which I claim to have furnished by the citation of numerous refractory and desperate cases successfully treated by the inoculation of bacterial vaccines.

If you have completely entered into my thought you will appreciate that if in this lecture I have restricted myself in the main to an exposition of the principles of vaccine therapy, leaving over so short a time to the discussion of the practical results which have been achieved, this has not been without set design. You will understand that it has been done because I felt that, if I could enlist interest in the method of vaccine therapy, if I could show on what principles it proceeds, and if I could induce here and there a scientific worker to embark on the task of mastering and carrying out patiently the somewhat delicate technic which, in my opinion, is essential to the proper exploitation of vaccine therapy, I might perhaps be taking the shortest way to procure a verdict on the practical efficacy of vaccine therapy which should be free from the fallacies which attach to any author's account.

TYPES OF BACTERIAL INFECTION PRESENTING SIMPLEST PROBLEMS

In conclusion, let me attempt to summarize briefly my personal experience of the practical results of vaccine therapy. You will, of course, appreciate that no one formula could possibly apply to all the various forms of infection which are encountered.

It will be well to commence with the type of bacterial infection which presents the simplest therapeutic problem.

(a) *Penetration of Single Species of Micro-organism into Body.*—In this type of infection, a single species of micro-organism has penetrated into the interior of the body and has established itself below the surface in one or more foci without causing any considerable destruction of tissue or constitutional disturbance.

Typical examples of this type are found in cases in which tubercle bacilli have effected a lodgment in lymphatic glands and in which staphylococci have penetrated into the subcutaneous tissue, causing as yet only suppurative (furuncular) as distinguished from necrotic (carbuncular) changes. In this type of infection, all but uniformly successful results have been achieved in my experience by vaccine therapy. In furunculosis, those results are achieved within a period of a few days. In tuberculous infection of the lymphatic glands the period required has varied, according to the extent of the infection and the patient's power of immunizing response, between five weeks and eighteen months. On the average it has been about six months.

What applies to tuberculous infection of the lymphatic glands applies in a general way also to tuberculous infection of the testicle and to simple tuberculous infection of the kidney and urinary passages. It applies also—but on this question I speak with a reserve imposed on me by very restricted experience—to early cases of tubercle of the lungs.

(b) *Ulcerative Type of Infection*.—In my experience this type of infection—a type which is met in connection with the breaking down of nodules in the deeper tissues or, as the case may be, with the penetration of superficial infections into those tissues—does not differ with respect to its tractability to vaccine therapy from the type of infection last considered, except when secondary infections have supervened. If anything—when secondary infections have either been avoided or successfully combated—an open ulcer is more tractable to vaccine therapy than a localized infection in the deeper tissues. It will be clear that every ulcer which starts from the surface ultimately makes its way down to a lymph-bearing stratum, and that as soon as it has done this the lymph stream which has been tapped will well up through the floor of the ulcer, coming in contact, as it does so, with the infecting micro-organisms.

(c) *Infections of the Skin*.—Infections of the skin fall naturally into two categories. When the infected skin is comparatively dry and scaly and non-vascular we are dealing with a form of infection which, in my experience, is extremely intractable to vaccine therapy. A typical example of such an intractable type of skin infection is furnished by the superficial scaly form of lupus which, from the point of view of its superficial resemblance to psoriasis, has been appositely denoted *lupus psoriasis*. Where the skin is vascular or, as the case may be, where we have a pustular form of infection as, for instance, in the case of pustular acne and pustular staphylococcal sycosis, we have, on the contrary, a form of type of infection which is very tractable to vaccine therapy.

(d) *Infections of Mucous Membranes and of the Glands and Ducts Connected Therewith*.—Infections of mucous membranes, in my experience, are readily influenced by vaccine therapy. I have obtained or had experience of successful results in many different infections of the mucous lining of the ear, antrum, nose, nasal sinuses, dental alveoli and salivary glands, also in bacillus coli infections of the intestinal mucous membrane and gall bladder, and in many different infections of the uterus, urinary bladder and urethra.

I would direct special attention to two points in these infections. The first relates to the question of mixed infection. It is plain that when we are dealing with bacterial infections of mucous membranes, which normally harbor on their surfaces numerous species of bacteria, the expulsion restriction of numbers of the peccant micro-organism—a restriction which can readily be achieved by vaccine therapy—may often be followed, when the mucous membrane has suffered in such a way as to lose its power of resistance, by a multiplication of some other competing form of micro-organism. My second point relates to the case of bladder infections. Here there is generally a bacteriuria in addition to the infection of the mucous membrane. Now it does not by any means follow that the extinction of the infection of the mucous membrane—which, judging from the abatement of the cystitis, can often be readily obtained by vaccine therapy—will be followed by a cessation of the bacteriuria. This last-mentioned result, however has, be it noted, already been obtained by the agency of vaccine therapy in five of the cases which I have treated.

(f) *Infections of Sinuses*.—In my experience, successful results are obtained when the inoculation of bacterial vaccines is combined with the course of treatment prescribed on page 568 (c).

(g) *Mixed Infections*.—Before discussing the results which have been obtained by vaccine therapy in mixed infections an introductory word may be appropriate. While the suggestion that mixed infections must be expected, in the common suppurative processes which occur in connection with surfaces which harbor microbes, may well be universally acceptable as not breaking in on any accepted ideas, the suggestion that mixed infection must perforce be considered in every case of phthisis, lupus, tubercular caries, tubercular cystitis and tubercular ulceration, in the very nature of things, will be unacceptable to many clinicians. Such a suggestion will be felt to throw doubt not only on the clearness of vision of those who have sought for antituberculous remedies in these diseases, but also on the critical acumen of those who, without taking into account the fallacies which are incidental to clinical methods have confidently undertaken to pass final judgment on antituberculous remedies by the observation of their clinical effects in cases in which, in addition to the tubercle bacillus, other pathogenetic microbes may have been at work.

Be it acceptable or unacceptable, there is no escape from the fact that practically every case of suppurating lupus is complicated by staphylococcus infection, and every aggravated case of lupus with a streptococcus infection. What holds true of lupus holds true *mutatis mutandis* of every tuberculous affection to which microbes can find access.

RESULTS OBTAINED BY VACCINE THERAPY

Having appreciated the magnitude and the far-reaching nature of the issues involved in the treatment of mixed infections, we may come to the question of the results achieved in these cases by vaccine therapy. We have two cases to consider.

(a) *Case in which Vaccine Therapy is Directed to the Destruction of Only One of the Infecting Microbes*.—In a few instances, notably in two cases in which there was found in association with a typical furunculosis a mixture of streptococci and staphylococci, the extinction of one of the microbes under the influence of the corresponding vaccine has indirectly led to the extinction of the other. This event, however, is extremely exceptional. In most cases the employment of vaccine therapy directed to the destruction of a single species of microbe leaves the other species quite unaffected. It may even—and this applies in particular to surface infections of mucous membranes or ulcers—conduce to the multiplication of the competing microbe.

(b) *Case in which Vaccine Therapy is Directed to the Destruction of All the Infecting Microbes*.—When in cases of mixed infection measures are taken to immunize the patient against each of the different infections successful results have been achieved, notably in lupus, cystitis, and endometritis While naturally the task of the immunizator is more laborious and more intricate in case two or three different vaccines are employed, it would seem that the organism of the patient does not find the task of responding to a series of different vaccines (always supposing that each of these is administered in appropriate and properly interspaced doses) more difficult than the task of responding to one variety of vaccine only

(c) *Generalized Infections*—In association with my fellow-workers, up to the present I have treated by vaccine therapy some half-dozen cases of Malta fever and an equal number of cases of streptococcal septicemia In each of the cases of Malta fever the course of the disease would seem to have been favorably influenced, the clinical improvement standing in each case in relation with an increased development of antibacterial substances in the blood

In the cases of streptococcal septicemia the results have been as follows In two cases—one of these being a case of malignant endocarditis—a complete cure was achieved, in each case in association with a very satisfactory immunizing response In a third case—also a case of malignant endocarditis—the high temperature which had lasted for three months before vaccine therapy was resorted to, came down to normal under the influence of the inoculations, the patient making an excellent immunizing response In this case, death by cardiac complication occurred on the fourth day after defervescence In three other cases of streptococcal endocarditis the patient succumbed, having in each case *failed* to make any immunizing response to the inoculations

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EVOLUTION OF MEDICAL EDUCATION IN THE ARMY

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CHICAGO

The recognition of the vital relation that a well organized and trained sanitary personnel bears to the efficiency of an army in the field has been of slow growth and there is yet an inadequate appreciation of that relationship in certain quarters, notwithstanding the awful lessons taught by sanitary unreadiness in many wars of recent times

It would appear that there is still cherished a belief among many otherwise well informed persons that in the event of war an abundant number of skilled physicians and surgeons would be available for duty with troops That is true, but the essential prerequisites of military training for the military physician is lost sight of The well equipped military surgeon must understand in addition to his purely professional duties, the complex subjects of medical administration, including the customs of the service, the hygiene of posts and camps, the service of the front and rear, during and after a battle, the establishment of field hospitals, of dressing and ambulance stations, the school of the soldier, the Hospital Corps drill, methods of removing wounded without litter, inspection and muster, the ration—how obtained and how managed, the preparation of reports—daily, every ten days, monthly, bimonthly, quarterly, semi-annually, yearly and occasionally, requisitions for medical supplies and clothing, and many other matters too numerous to mention at this time The all-round medical officer is the product of special education and training and does not emerge ready for duty with troops from the lecture or dissecting room, or even from the ranks of experienced practitioners

Most all governments have established medical schools for the education of the army medical department, and so necessary is this training of the military surgeon that the Secretary of War, on the recommendation of the Surgeon-General, then General Sternberg, directed the establishment of an Army Medical School in the city of Washington in 1893 for the instruction of approved candidates for admission to the medical corps in their duties as medical officers The term at first occupied four months, from November 1 to February 28, but under the administration of General O'Reilly it has been extended to eight months, from October 1 to May 31, and medical officers of the militia are included among those eligible for admission Under General O'Reilly also a change was made in the system of examining candidates to determine their fitness for admission to the corps A preliminary examination of applicants is held at military posts in various parts of the country near the larger cities in order to reduce the expense of the candidate to the minimum This examination is preceded by an investigation as to the physical condition of the applicant, and if this is found to be satisfactory he is examined in anatomy, physiology, practice of medicine and surgery and general and military hygiene Those who are successful in passing this examination become student candidates, are given the appointment of contract surgeon and ordered to Washington to attend the next term of the Army Medical School They receive mileage when traveling under orders which more than covers their traveling expenses and are paid $100 a month while in attendance at the school At the close of the term all candidates are subjected to a rigid physical and professional examination and those found qualified are appointed in the order of their standing to fill existing vacancies in the Medical Department

To stimulate emulation and reward industry students who receive at least 80 per cent. are rated as "proficient" and those who reach 90 per cent or over are rated as "proficient with honor" on certificates of graduation, and those commissioned in the Medical Corps are borne on the Army Register as "graduates" or "honor graduates" as the case may be During the course the students are subject to military discipline and their character, habits and general deportment closely observed, and if for any valid reason a student candidate for commission is deemed undesirable his contract may at any time be annuled by the Surgeon-General

The school consists of a president and such instructors, assistant instructors, student officers, student candidates and enlisted men as may be assigned to duty with it by the War Department The course of instruction is both theoretical and practical and embraces the following subjects

1 Duties of medical officers
2 Medical Department administration and customs of the service.
3 Military hygiene
4 Clinical microscopy
5 Military surgery
6 Tropical medicine.
7 Sanitary chemistry
8 Hospital Corps drill
9 Operative surgery
10 Ophthalmology and optometry
11 Military medicine.
12 X ray work
13 Equitation

Candidates for graduation are examined in the above subjects, and student candidates in the following additional subjects, viz

14 Surgery	17 Obstetrics
15 Practice of medicine	18 Hygiene
16 Diseases of women and children	19 Bacteriology
	20 Pathology

The regulations for the school are very comprehensive and provide for all contingencies, but it is unnecessary to enumerate them, the educational features being the only ones which will be of interest here They embrace every subject necessary to thoroughly equip the young medical officer for the duties he will ordinarily be called on to perform, and the practical outcome has been to bring the corps to the highest degree of professional efficiency

In regard to the attendance and graduation of medical officers of the organized militia at the Army Medical School, I think it is a matter which should be encouraged Great benefit will eventually result to the cause of military sanitation from the diffusion of the information there gained, and for that reason I believe the militia graduates of the school should return to their regiments and take up the duty of instructing other surgeons connected with state troops It is obvious that this will result in much benefit to the cause of military sanitation, and although a slow process I think it will be acknowledged to be better than the much slower and more imperfect mode at present in use

A complete system of military education for the entire army has by degrees been perfected and covers every arm and department of the service The schools comprised in this system in addition to the Army Medical School are

1 The Military Academy at West Point for the education of cadets
2 Post schools for the instruction of enlisted men
3 At each military post a garrison school for the instruction of officers in the subjects pertaining to their ordinary duties
4 Special service schools—
    (a) The Artillery School at Fort Monroe, Va
    (b) The Engineer School, Washington Barracks, D C
    (c) The School of Submarine Defense, Fort Totten, N Y
    (d) The School of Application for Cavalry and Field Artillery, Fort Riley, Kansas
    (f) The Signal School, Fort Leavenworth, Kansas
    (g) The Infantry and Cavalry School, Fort Leavenworth, Kansas
5 The Staff College, Fort Leavenworth, Kansas
6 The Army War College, Washington, D C
7 The Military department of civil institutions at which officers of the army are detailed under the provisions of law

The army in time of peace may be regarded as a vast educational institution At many of these schools a course in military hygiene is included in the curricula At West Point instruction in this subject is given by a professor of military hygiene, who is a medical officer and a member of the academic board At the infantry and cavalry school, Ft Leavenworth, and at the garrison schools for artillery, infantry and cavalry military hygiene is taught

By General Orders No 128 War Department, Series of 1906, officers of cavalry and infantry for promotion from second to first lieutenant and from first lieutenant to captain must pass an examination in military hygiene sufficiently extended to show familiarity with the subjects as treated in the authorized text-book

Officers of the artillery corps for promotion from second lieutenant to first lieutenant are required to pass an oral examination in military hygiene

Naturally all men of the Hospital Corps are instructed under the supervision of medical officers in the duties of litter bearers and the methods of rendering first aid to the sick and wounded and in the various subjects pertaining to the sanitary soldier

In addition to this, special instruction in the methods of rendering first aid to the sick and wounded is given to all enlisted men of the line of the army by their company officers

From the above hasty summary of the educational work being done in our army it is evident that the importance of the sanitary care of troops is becoming more and more recognized and that in time it will come fully into its own and be regarded as of equal importance in conducting campaigns and gaining victories as tactics, strategy, marksmanship or any other single measure on which success may depend

NUMERICAL STATEMENT OF EXAMINATION OF APPLICANTS FOR APPOINTMENT IN THE MEDICAL CORPS OF THE ARMY FROM JAN 1, 1888, TO DEC 31 1906

Year	Number of applicants examined	RESULTS OF EXAMINATION							
		Approved		Physically disqualified		Withdrew		Rejected	
		Num	Per ct	Num	Per ct	Num	Per ct	Num	Per ct
1888	24	2	8 33	6	25	13	54 17	3	12 5
1889	45	6	13 33	15	33 33	14	31 11	10	22 22
1890	40	6	15	6	15	3	7 5	25	62 5
1891	43	10	23 26	13	30 23	10	23 26	10	23 26
1892	59	12	20 34	13	22 03	21	35 6	13	22 03
1893	59	13	22 03	13	22 03	2	3 39	31	52 55
1894*									
1895	41	5	12 2	17	41 46	2	4 88	17	41 46
1896	39	8	20 51	11	28 2	3	7 7	17	43 59
1897	34	6	17 65	8	23 53	9	26 47	11	32 35
1898	178	33	18 54	44	24 72	18	10 11	83	46 63
1899*									
1900	82	28	34 15	11	13 41	21	25 61	22	26 82
1901	308	65	21 11	97	31 49	56	18 18	90	29 22
1902	191	46	24 08	38	19 9	74	38 74	33	17 28
1903	131	25	19 08	35	26 72	40	30 54	31	23 66
1904	67	11	16 42	19	28 36	4	5 97	33	49 25
Totals	1341	276	20 58	346	25 8	290	21 63	429	31 99

*No examination

NOTE.—Prior to July 1 1904, the examination embraced inquiry into all branches of medical education with appointment of approved applicants at its termination The examination prescribed in 'Circular of Information' approved by Secretary of War June 21 1904 consisting of a preliminary examination, a course of instruction at the Army Medical School and a final or qualifying examination has obtained since July 1 1904

Year	Number of applicants examined	PRELIMINARY EXAMINATION							
		Qualified		Physically disqualified		Withdrew		Rejected	
		Num	Per ct	Num	Per ct	Num	Per ct	Num	Per ct
1904	18	3	16 67	3	16 67	2	11 11	10	55 55
1905	64	19	29 69	15	23 44	4	6 25	26	40 62
1906	88	13	14 78	26	29 54	6	6 82	43	48 86
Totals	170	35	20 59	44	25 88	12	7 06	79	46 47

Year	Student candidates examined	QUALIFYING EXAMINATION					
		Approved		Physically disqualified		Rejected	
		Num	Per ct	Num	Per ct	Num	Per ct
1904							
1905	4	4	100				
1906	16	11	68 75	2	12 5	3	18 75
Totals	20	15	75	2	10	8	15

Note The percentage of candidates admitted to the medical department has progressively increased as shown by the table This is undoubtedly due to improved educational requirements by many medical colleges throughout the country The admissions for 1905 and 1906 are very large on account of the requirement of a second examination for admission after an attendance of nine months at the Army Medical School in Washington.

Clinical Notes

BILATERAL TUBAL PREGNANCY

HARRY GREENBERG, M D

MILWAUKEE, WIS

History—Mrs M B, aged 29, married 6 years, has one child 3 years old, no miscarriages, menses always regular and normal The last menstruation occurred as usual after 28 days, but was accompanied by considerable pain, which necessitated her taking to bed A piece of membrane was passed on the third day, after which the pain and flow ceased The physician consulted diagnosed miscarriage and advised removal to a hospital for curettement I saw her for the first time on the following day at the hospital

Examination—Patient a medium sized woman, poorly nourished, very anemic, mucous membranes almost white and skin of a dirty sallow color She said she was always pale She complained of feeling weak, loss of appetite, restlessness and sleeplessness No pain Temperature 101 8 F, pulse 106 Thoracic and abdominal organs negative Uterus slightly enlarged and somewhat tender at the fundus Uterine adnexa somewhat thickened A waiting course was advised After a few days her temperature and pulse came down to normal and her general condition improved markedly This condition continued unchanged for six weeks At the end of that period while resting comfortably in bed she suddenly developed a chill her temperature rose to 102 8 F and she appeared in general considerably depressed On micturition passed dark red blood along with the urine Under stimulations her general condition improved, while the bladder symptoms continued unabated, blood was passed in large quantities at frequent intervals Local aplications to the interior of the bladder seemed to aggravate the condition A pelvic examination three days later revealed the uterus enlarged, tender to the touch and situated high up in the pelvic cavity On either side of the uterus was a soft, semi fluctuating mass of about the size of a hen s' egg, these masses having evidently developed during the past six weeks, and from the fact that she has not again menstruated a diagnosis of ectopic gestation with the possibility of the rupture of the ectopic sac into the bladder was made. Surgical intervention was advised and consented to

Operation—Fluid and clotted blood was found in lower abdomen Several coils of intestines firmly adherent to pelvic organs On separating the adhesions a sausage-shaped mass, bleeding from its distal extremity and continuous with the left horn of the uterus was found and removed This proved to be the left Fallopian tube filled with clotted blood and membrane and ruptured at its fimbriated end On the right side a similar but larger mass was found This mass rested slightly on the interior uterine wall, but mainly on the bladder wall between its peritoneal attachment to the uterus and the symphysis pubis, and was firmly adherent to that viscus On separating it from the bladder, a rent about ⅛ inch in diameter was disclosed in the bladder wall, corresponding to a similar rent in the removed mass This mass, like the first, proved to be an ectopic tube

This case is reported because of the rarity and significance of the bladder complication There seems to be no adequate reason for the rupture of the bladder to have taken place No history of bladder trouble that might have weakened its walls could be elicited Ocular and manual examination revealed no diseased condition there The path of least resistance could certainly not be considered in this instance I can only explain it as one of Nature's freaks which can not generally be accounted for, but for which the surgeon need always be on his guard

A CASE OF INDURATING EDEMA OF THE PENIS

O L SUGGETT, M D

ST LOUIS

Attracted by the paper of Dr Taylor on indurating edema in The Journal, July 13, I am led to report the following case I agree with him as to the extreme rarity of this condition, having encountered but this single case in seven years of private and dispensary practice, the latter comprising a clinic of from one hundred and fifty to two hundred cases of syphilis monthly In my available text-books I find indurating edema mentioned specifically in but two Mracek and Gottheil, the latter classifying it as a variety of the initial lesion, the former supplementing a short description of the condition with an excellent water color reproduction depicting the condition in a labium majus In the light of my present information I believe I have observed a few such cases in the secondary period in women, but I was unable at the time to place them in their proper category

History—My case began in no unusual manner, the initial lesion being quite ordinary, small, exulcerated, situated in the sulcus, imbedded in an induration very moderate in extent and hardness and fairly well defined The patient had a prepuce which entirely covered the glans and which was easily retracted, but in the second week of the evolution of the chancre it began to assume the indurating edema which finally entirely prevented its retraction The induration extended gradually over the skin of the entire penis back to a point near its root

Examination—On palpation the condition feels in no way like the ordinary edema of lymphangitis which is a complication of many venereal cases, being firm and elastic and violaceous in color, nor yet was it hardly as firm as the sclerosis surrounding an ordinary chancre, this difference being noticeable at the margin of the site of infection, where it merged into the indurative edema of the contiguous skin The condition was very obstinate and remained long after the chancre had healed In proper time he developed an ordinary macular eruption interspersed here and there with a few papules

Subsequent History—I lost sight of him, but at the time of his disappearence, although his other symptoms were on the wane, there was but little, if any difference in the size or consistency of the penis There was a sufficient subsidence in the acute inflammatory condition of the chancre and its immediate vicinity to permit me to separate the prepuce from the glans sufficiently to see that it was healed I can not say, however, what the ultimate results of prolonged and proper treatment would have been

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The Physician's Remuneration—A poorly supported doctor is generally one who can not keep up to date in mental equipment or in instrumental armamentarium and the patients of that man will suffer—*California State Journal of Medicine*

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of the medical colleges in the United States that are legally chartered to confer the degree of doctor of medicine, and whose diplomas are recognized by at least one state licensing board The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law The information given is obtained from reports and from the catalogues and has been submitted to the dean of each school for his inspection and approval Colleges which belong to the Association of American Medical Colleges or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect Extracts from these rules are given at the close of the list of colleges Population figures for states are taken from the United States Bureau of Education estimates for 1905, and for cities from the United States Census Bureau's estimate for 1903

ALABAMA.

Alabama, population 1 986,347, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birmingham The population of Mobile is 40 686 and of Birmingham 42,087 Board and room may be obtained from $12 to $20 per month

Birmingham.

BIRMINGHAM MEDICAL COLLEGE—This school was incorporated in 1894 and is situated in Birmingham The Hillman, St Vincent s Pratt and County hospitals are accessible to the students There are 18 professors and 9 assistants, total 28 The school is a member of the Southern Medical College Association The course of instruction embraces four separate sessions of six months each The fees are $75 for each of the first three years and $100 for the fourth The Dean is Dr B L Wyman Registration, 1906 7, 113, graduates 12 The fourteenth session opens Oct. 2, 1907, and closes April 2, 1908

Mobile

MEDICAL DEPARTMENT OF THE UNIVERSITY OF ALABAMA—This school was organized in 1859 as the Medical College of Alabama It became the Medical Department of the University of Alabama in 1897 Name changed to the above in 1907 The faculty consists of 8 professors and 15 lecturers and assistants, a total of 23 The City Hospital furnishes clinical material The college is a member of the Southern Medical College Association The course of study covers four years of seven months each The total fees for each of the first three years is $100, for the fourth year, $125 The Dean is Dr George A Ketchum Total registration 1906 7, 170 graduates 28 The forty second session will begin Oct 2, 1907, and will close May 1, 1908

ARKANSAS

Arkansas, population 1,403,239, has two medical colleges, oth located in Little Rock, a city of 42,036 people Board d lodging cost from $13 to $18 per month

Little Rock

UNIVERSITY OF ARKANSAS MEDICAL DEPARTMENT—This college was organized in 1879 as the Arkansas Industrial University Medical Department The faculty consists of 15 professors and 20 lecturers and assistants total 35 Hospital facilities are furnished by Logan H Roots Memorial Hospital, St Vincent s Infirmary and Pulaski County Hospital the latter having a capacity of 200 beds The course of study covers four years of seven months each The Secretary is Dr F L French The fees are Matriculation $5 paid but once, tuition, per year, $60 graduation fee $25 Total registration 1906-7 was 182 graduates, 26 The twenty ninth session begins Oct 1 1907 and ends May 1, 1908

COLLEGE OF PHYSICIANS AND SURGEONS—This college was organized in 1906 and has a faculty of 25 professors and 14 lecturers and assistants a total of 39 It occupies the buildings formerly used by the Maddox Seminary The course of study covers four years of seven months each The Dean is Dr J P Runyan The total enrolment for 1906-7 was 87 graduates 11 The second session begins Oct 2, 1907, and ends April 30, 1908

CALIFORNIA.

California population 1 620,883, has seven medical colleges Four are located in San Francisco, a city having, before the earthquake 355,919 inhabitants They are Cooper Medical College, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons Board and lodging can be obtained for from $20 to $30 a month The College of Medicine of the University of Southern California and the College of Physicians and Surgeons are situated in Los Angeles, population 116,420 Board and lodging can be obtained in that city for $4 a week and upward The Oakland College of Medicine and Surgery is in Oakland, population 70,386

Los Angeles

UNIVERSITY OF SOUTHERN CALIFORNIA COLLEGE OF MEDICINE—This school was organized in 1885 and has a faculty of 29 professors and 19 instructors 48 in all The County Hospital having 200 beds the Emergency Hospital of 160 beds the Children s Hospital of 20 beds, and a college dispensary furnish clinical material This college is a member of the Association of American Medical Colleges and gives no admission examination The course covers four years of eight months each The fees for each year are $115 The Dean is Dr William D Babcock. Total registration for 1906-7 was 99, graduates 27 The twenty third session opens Oct 3, 1907, and closes June 11, 1908

COLLEGE OF PHYSICIANS AND SURGEONS—This school was organized in 1903 The course covers four years of nine months each The faculty consists of 28 professors and 11 lecturers and instructors a total of 39 The Dean is Dr Charles W Bryson Delta Building, Los Angeles The registration for 1906 7 was 34, graduates 2 The fifth session begins Sept. 26, 1907, and ends June 26, 1908

Oakland

OAKLAND COLLEGE OF MEDICINE AND SURGERY—Organized in 1900 opened in 1902 first class graduated in 1906 The length of the course is nine months The classes are limited to ten students each The Registrar is Dr Edward N Ewer The faculty numbers 28 Tuition is $150 yearly Total registration 1906 7 10 graduates 2 The sixth session begins Aug 19, 1907, and ends May 22, 1908

San Francisco

COOPER MEDICAL COLLEGE—This school was organized in 1858, though its present name was not adopted until 1882 The faculty consists of 18 professors and 41 lecturers instructors, etc, 59 in all Lane Hospital adjoining the college the City and County Hospital, containing 404 beds and the college dispensary furnish clinical material This school is a member of the Association of American Medical Colleges The course covers four years of eight and a half months each Fees Matriculation, $5 course fee for each year, $150, laboratory fee for each year, $10, breakage deposit each year, $10 graduation fee $25, no other charges The Dean is Dr Henry Gibbons Jr Total registration for 1906 7 was 112, graduates, 29 The thirty ninth session opens Aug 15, 1907, and closes May 8, 1908

UNIVERSITY OF CALIFORNIA MEDICAL DEPARTMENT—This department of the State University was organized in 1872 and has a faculty composed of 18 professors 44 associates and assistants a total of 62 The City and County Hospital and the college dispensary furnish good clinical material The college also has its own hospital with 43 beds The course covers four years of nine months each This school is a member of the Association of American Medical Colleges Two full college years' work is required of all applicants for admission The fees are Matriculation $5 tuition $150 each year laboratory fees extra The Dean is Dr Arnold A D'Ancona Total registration for 1906 7 was 54 graduates 24 The thirty fifth session opens Aug 15, 1907, and will close May 15 1908

COLLEGE OF PHYSICIANS AND SURGEONS OF SAN FRANCISCO—This school was organized in 1896 and has a faculty of 28 professors and 15 associate professors and teachers, a total of 43 The hospital facilities consist of the City and County Hospital and St Winifred Hospital with 50 beds Attendance on four terms of at least 30 teaching weeks each is required for graduation Fees $100 per year The Dean is Dr D A Hodghead Registration for 1906 7 was 79, graduates 16 The twelfth session opens Sept 16 1907, and closes May 14 1908

HAHNEMANN MEDICAL COLLEGE OF THE PACIFIC—Homeopathic This school was organized in 1884 The Dean is Dr James W Ward 606 Sutter St San Francisco Total enrolment for 1906 7 was 28 graduates 2 The twenty fifth session begins Sept 12, 1907, and will close May 23 1908

COLORADO

Colorado, with a population of 530,700, has three medical colleges Two of these, Denver and Gross College of Medicine and Westminster University College of Medicine, are in Denver, which has a population of 144,588, the other the Colorado School of Medicine, is at Boulder, population 6 150 Board can be obtained in Denver for $5 a week and upward

Boulder

COLORADO SCHOOL OF MEDICINE—This is the Medical Department of the University of Colorado and was opened in 1883 The University Hospital, under the control of the state and equipped to accommodate 40 patients and the Sanitarium furnish clinical material Both hospital and dispensary clinics are offered and the sanatorium located at Boulder offers additional advantages in this line The faculty embraces 18 professors and 9 lecturers and assistants a total of 27 This school is a member of the Association of American Medical Colleges The work embraces a graded course of four years of nine months each The tuition is $50 per year there are no other fees The Dean is Dr Luman M Giffin Total registration for 1906 7 was 58 graduates 12 The twenty sixth session begins Sept 11, 1907, and closes June 7, 1908

Denver

THE DENVER AND GROSS COLLEGE OF MEDICINE—This is the Medical Department of the University of Denver and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880) The college dispensary the Denver County Hospital St Luke's Hospital St Anthony's Hospital St Joseph's Hospital National Jewish Hospital for Consumptives Home for Dependent Children the City Contagious Hospital and Mercy Sanitarium furnish clinical material The faculty is made up of 34 professors 6 assistants and instructors a total of 70 The course covers four years of eight months The college is a member of the Association of American Medical Colleges Fees for the first year are $115 For the second year $110 Third year $101 Fourth year $120 Total registration 1906 7 was 101 graduates 29 The twenty sixth session will begin Sept 10, 1907 and close May 15, 1908 The Dean is Dr S G Bonney

WESTMINSTER UNIVERSITY COLLEGE OF MEDICINE.—This school was organized in 1894 as the Denver Homeopathic College but in 1907 became non sectarian with the above name Clinical facilities are furnished by the City and County Hospital the Park Avenue Hospital and the Tabernacle Free Dispensary The faculty numbers 37 The course of study covers four years of eight months each Fees A five-year scholarship $350 payable in advance otherwise tuition is $185 a year, matriculation fee $5 payable but once The Dean is Dr J B Kinley Total registration for 1906-7 was 42 graduates 6 The thirteenth session begins Sept 9 1907 and ends May 14 1908

CONNECTICUT

Connecticut, with a population of 989,500, has only one medical college, located in New Haven, population 114,600 Board and lodging cost $4 50 and upward per week

New Haven

YALE MEDICAL SCHOOL—This is the Department of Medicine of Yale University In 1810 a charter was granted for the establishment of this school and in 1813 it was organized as the Medical Institution of Yale College In 1879 the name was changed to the one now used. Clinical material is furnished by the New Haven Hospital having 175 beds Springside Hospital the State Hospital for the Insane with its 1 800 patients and a college dispensary The faculty consists of 12 professors and 44 lecturers and assistants, a total of 56 The course covers four years of nine months each This college is a member of the Association of American Medical Colleges The fees are $150 each year in the first year there are additional fees amounting to $18 and in the second $8, and there is a graduation fee of $10 The Dean is Dr Herbert E Smith New Haven. During the session of 1906 7 there were 153 matriculants and 29 graduates The ninety fifth sessions opens Sept 26, 1907 and closes June 24 1908

DISTRICT OF COLUMBIA

Washington population 293,217, has three medical colleges, George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department Board and lodging can be had at reasonable rates.

Washington

THE GEORGE WASHINGTON UNIVERSITY, DEPARTMENT OF MEDICINE—This school was organized in 1821 as the Department of Medicine of Columbian College which in 1873 became Columbian University and in 1904 by an act of Congress, changed its name to the George Washington University The University Hospital the Garfield Hospital the Children's Hospital the Central Dispensary and Emergency Hospital the Providence Hospital the Columbia Hospital the Episcopal Eye and Ear Hospital the U S Government Hospital for the Insane and the Lutheran Eye and Ear Infirmary afford opportunities for clinical instruction The faculty is composed of 40 professors and 41 instructors demonstrators and assistants This school is a member of the Association of American Medical Colleges Beginning with the session of 1909 10 matriculants must present credentials of two years work in a college of liberal arts or its equivalent. A combined course of six years work leading to the degrees of A B and M D is offered. The course of instruction extends through four years of eight months each The total fees for the first year are $157 for the second year $152 for the third year $112 and for the fourth year, $162 A breakage deposit of $5 is required The Dean is Dr W F R Phillips 1607 16th St. N W The total registration for 1906 7 was 215 graduates 63 The eighty sixth session begins Sept 25 1907 and closes June 8 1908

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE.—This school organized in 1850 controls the Georgetown University Hospital which affords clinical facilities Clinics are also held in Providence Hospital containing 500 beds at the Government Hospital for the Insane containing over 2 000 beds in the Children's Hospital the Central Dispensary Emergency Hospital and the Garfield Hospital The faculty contains 19 professors 54 instructors and assistants total 73 The school is a member of the Association of American Medical Colleges The course of study extends over four terms of eight and one half months each The fees are $150 each year The Dean is Dr George M Kober 1600 T St The registration for 1906-7 was 82 graduates 12 The fifty seventh session opens Sept 27 1907 and ends June 11 1908

HOWARD UNIVERSITY MEDICAL DEPARTMENT—This institution was organized in 1867 and is open to all without regard to sex or race Colored students compose a majority of those in attendance The Freedman's Hospital is a general hospital of 300 beds. The faculty comprises 17 professors and 27 lecturers and assistants 44 in all This college is a member of the Association of American Medical Colleges. The course covers four years of eight months each The fees of each session are $100 plus $10 for graduation The Dean is Dr Robert Reyburn 2129 F St Registration for 1906-7 was 186 graduates 44 The fortieth session begins Oct 1 1907 and closes June 1, 1908

GEORGIA

Georgia, population 2,405,821, has five medical colleges, Medical College of Georgia, located in Augusta, population 41,283, Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, Georgia School of Eclectic Medicine and Surgery, and the International Medical Missionary College, are in Atlanta, a city of 96,550 population Board and lodging may be obtained for from $3 to $5 per week

Atlanta

ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS—This school was formed in 1898 by the consolidation of the Atlanta Medical College organized in 1854 with the Southern Medical College, organized in 1879 It has a faculty of 19 professors and 22 assistants a total of 41 Clinical facilities are furnished by the Grady Hospital The course of study covers four years of seven months each Fees First and second years, $75 each, third and fourth $100 each The Dean is Dr W S Elkins 29 Luckie St Total registration of students for 1906 7 was 200, graduates, 37 Next session begins Oct 1 1907 and closes May 1, 1908

GEORGIA COLLEGE OF ECLECTIC MEDICINE AND SURGERY—This school was organized in 1839 and has a faculty of 16 The Proctor is Dr Elzie B Thomas 121 Park St West End Total number of students for 1906 7 was 76, graduates 12 The next session opens Oct 3 1907 and closes April 1, 1908 (about)

ATLANTA SCHOOL OF MEDICINE.—This school was organized in 1905 The course covers four years of seven months each Enrolment for 1906 7 was 233 Number of graduates 20 The third session begins Sept 27 1907, and ends April 30 1908 The Dean is Dr George H Noble The Proctor is Dr Edward G Jones

INTERNATIONAL MEDICAL MISSIONARY MEDICAL COLLEGE.—This school was organized in 1905 Enrolment for 1906 7 was 12, 1 graduate The Dean is Dr J McFadden Gaston

Augusta.

MEDICAL COLLEGE OF GEORGIA.—This school was organized as a medical academy in 1829 and in 1873 was made the Medical Department of the University of Georgia Its faculty includes 18 professors and 12 assistants 30 in all The course is four years of seven months each This school is a member of the Southern Medical College Association The City Hospital with 130 beds Lamar Hospital with 80 beds the Polyclinic and the Hospital for Contagious Diseases supply clinical material Fees for the first two years are $75 each third year, $100 and $130 for the last year The Dean is Dr Joseph Eve Allen The total enrolment for 1906 7 was 98 graduates 20 The seventy sixth session begins Oct. 1, 1907, and ends May 1, 1908

ILLINOIS

Illinois, population 5,319,150, has fourteen medical colleges, four of which are night schools, all located in Chicago, a city of 1,873,880 inhabitants, and are as follows Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, Chicago College of Medicine and Surgery, Dearborn Medical College, and Reliance Medical College Room and board cost $3 a week and upward

Chicago

RUSH MEDICAL COLLEGE—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898 and in the latter year became affiliated with the University of Chicago The faculty is composed of 83 professors 155 associates, instructors, etc. a total of 238 Clinical facilities are furnished by Cook County Hospital caring for about 20 000 patients yearly Presbyterian Hospital with 250 beds a college dispensary, and an obstetric department The requirements for admission are those of admission to the better universities or colleges, and in addition thereto two years of college work This college work must have included courses in college chemistry (inorganic, organic and qualitative analysis), college physics and biology all with laboratory work and a reading knowledge of German or French The course covers four years of three quarters each a quarter being three months An optional fifth year consisting of a hospital internship or of a fellowship in one of the departments is offered. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year A combined course for six years years confers degrees of both science and medicine All freshman and sophomore studies are given at the University of Chicago The total fees are $180 each year A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually The Deans are Dr Frank Billings 100 State St. and Dr John M. Dodson 34 Washington St Total registration 1906 7 was 567, graduates 83 The sixty fifth fiscal year begins July 1

COLLEGE OF PHYSICIANS AND SURGEONS—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois The faculty is composed of 42 professors 156 assistants and instructors a total of 198 The West Side Hospital containing 125 beds Cook County Hospital, and a college dispensary and maternity clinic supply clinical material This school is a member of the Association of American Medical Colleges The collegiate year is divided into two terms the winter term of thirty six weeks and the summer term of twelve weeks of actual teaching Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation The fees are $145 each for the first two years, $150 for the third, and $175 for the fourth year The Dean is Dr William F Quine, 103 State St Total registration for 1906-7 was 501, graduates, 146 The fall term begins Oct 1, 1907, and ends June 9, 1908

Northwestern University Medical School—This school was organized in 1859 as the Medical Department of Lind University became independent as the Chicago Medical College in 1864 and in 1869 assumed its present relation as Medical Department of Northwestern University The faculty comprises 38 professors and 78 assistants and instructors, in all 116 Wesley Hospital, with 225 beds, Mercy Hospital, containing 400 beds Provident Hospital, 100 beds St Luke's 200 beds, the Chicago Lying in Hospital and a college free dispensary furnish clinical facilities Applicants for admission must by diploma certificate or examination show possession of the educational requirements required to enter the College of Liberal Arts of Northwestern University The course of study covers four years of thirty six weeks each Final examinations are held at the end of each semester The fees for each year are $175, and a matriculation fee of $5, paid once is charged The Dean is Dr N S Davis Chicago Savings Bank Building The total registration for 1906-7 was 473 graduates, 134 The forty eighth session opens Oct. 1, 1907, and closes May 31, 1908

American Medical Missionary College—This school was organized in 1895 and has the primal object of educating men and women as missionary physicians The faculty numbers 28 The work of the first two years is carried on at Battle Creek Mich, and that of the last two years in Chicago A hospital with 20 beds in connection with the college together with dispensaries in both cities, supply material for practical work The college is a member of the Association of American Medical Colleges The course covers four years of nine months each Total fees are $80 for each of the four years The Secretary is Dr E L Eggleston, Battle Creek Mich Total registration for 1906-7 was 46, graduates, 10 The thirteenth session opens Sept. 17, 1907, and closes June 12, 1908

Illinois Medical College—This school, organized in 1894, has a faculty of 34 professors and 16 assistants a total of 50 A college dispensary and Cook County Hospital are available for clinical study The college is a member of the Association of American Medical Colleges Attendance for seven months during each year is necessary for graduation Total fees are about $125 for each year The Dean is Dr B B Eads, 103 State St Total registration for 1906-7 was 212, graduates, 40 The thirteenth session begins Sept. 1, 1907, and ends April 10, 1908

Jenner Medical College.—This is a day and evening school, organized in 1892 The faculty consists of 46 professors and 7 assistants 53 in all The course covers four years of 40 weeks each The total fees each year are $100, with a $5 matriculation fee, paid but once The Registrar is Dr J G Tyssowski 196 Washington St Total enrolment for 1906-7 was 185, graduates, 19 The next session begins Sept 3, 1907 and will end June 27 1908

Dearborn Medical College—This school was organized in 1903 with a faculty of 40 professors and 5 assistants a total of 45 The instruction which is given in the evening extends over a period of five years The total fees are $5 matriculation fee $110 tuition and $10 laboratory deposit The Secretary is Dr Paul J Faber Total registration for 1906-7 was 126 graduates 26 The next session begins Sept 2, 1907, and ends June 23, 1908

Hahnemann Medical College—Homeopathic This school was organized in 1859 and has a faculty of 80 Hahnemann Hospital and a college dispensary supply clinical material The course is four years of eight months each Fees Matriculation paid once $5, each semester, $50, and hospital tickets $5 each for third and fourth years The Registrar is Dr W Henry Wilson Total registration 1906-7 was 136, graduates, 42 The forty eighth session begins Sept 30 1907, and ends May 23, 1908

Hering Medical College.—Homeopathic. This school was organized in 1892 Dunham Medical College, organized in 1895 was consolidated with it in August 1902 In January, 1905 it purchased the Chicago Homeopathic College Building at 350 South Wood St opposite Cook County Hospital, which it now occupies The faculty comprises 35 professors and 30 associates lecturers etc, in all 65 Chicago Homeopathic Frances Willard and Cook County hospitals supply clinical facilities The course covers four years of eight months each The total fees for a full course are $300 if paid in advance or $100 per year The Dean is Dr H C Allen Total registration for 1906-7 was 80 graduates 11 The fifteenth session begins Sept 30 1907, and ends June 1, 1908

College of Medicine and Surgery—Physio Medical Organized in 1896 It has a faculty of 34 professors and 3 assistants The course covers four years of eight months each Fees for the first second and third years $110 each and $115 for the fourth The Secretary is Dr N La Doit Johnson 1146 Washington Blvd Total registration for 1906-7 was 28, graduates 2 The next session begins Sept 26 1907, and ends May 17, 1908

Bennett College of Eclectic Medicine and Surgery—This school, organized in 1868, has a faculty of 40 professors and 12 assistants 52 in all The Bennett Cook County and Baptist hospitals and a college dispensary supply clinical facilities The course covers four years of thirty weeks each This school is a member of the National Confederation of Eclectic Medical Colleges Fees for each year are $100 with a matriculation fee paid once of $5 The Secretary is Dr William J Pollock Total registration 1906-7 was 153 graduates, 34 The fortieth session begins Sept 24, 1907, and ends May 2 1906

Chicago College of Medicine and Surgery—This school was founded in 1901 as the American College of Medicine and Surgery Name changed to the present title in 1907 The course is four years of eight months each Frances E Willard and Cook County hospitals supply clinical material The Secretary is Dr T N Roe The annual fee is $100, matriculation fee is $5 The enrolment, 1906-7 was 239 graduates 35 The seventh session begins Sept. 25 1907 and closes May 22 1908

National Medical University—This school was organized in 1891 Total enrolment for 1906-7 was about 250, graduates 24 The Dean is Dr L D Rogers

Reliance Medical College—This institution has just been organized as a night school It has leased the building and equipment of the Illinois Medical College for the hours 6 to 10 p m The president is Dr T F Burkholder The first session begins Sept 2 1907

INDIANA.

Indiana, population, 2,678,492, has five medical colleges Four are situated in Indianapolis, a city of 191,033 people The Indiana Medical College, the Eclectic Medical College, the Physio Medical College of Indiana, and the State College of Physicians and Surgeons Board and lodging can be obtained from $3 a week upward The School of Medicine Indiana University, is situated in Bloomington, a city of 5,000

Bloomington and Indianapolis

Indiana University School of Medicine and the Affiliated State College of Physicians and Surgeons—These affiliated schools give together the four years of the medical course and are members of the Association of American Medical Colleges The first two years at Bloomington were organized in 1903 The affiliated State College of Physicians and Surgeons at Indianapolis where the last two years are taught was organized in 1906 In the college building the school maintains its own hospital of 75 beds for clinical instruction and also a dispensary Students are admitted directly from commissioned high schools, but in 1910 one year of collegiate work will be required The combined faculty consists of 40 professors 22 instructors and 15 special lecturers a total of 77 The enrolment in 1906-7 was 109, graduates 25 The next session at Bloomington begins Sept 22 1907 and ends June 25, 1908 The Secretary is Dr B D Myers The next session at Indianapolis begins September 8 and ends May 20 1908 The Secretary is Dr John F Barnhill Commencement May 20, 1908, at Indiana University, Bloomington, Ind

Indianapolis

Indiana Medical College The School of Medicine of Purdue University—Organized in 1869 as The Medical College of Indiana Medical Department of the University of Indianapolis In September, 1905 it consolidated with Purdue University the Central College of Physicians and Surgeons and the Ft Wayne College of Medicine and assumed above title The faculty embraces 50 professors and 60 lecturers demonstrators and assistants Clinical facilities are furnished by the Bobbs Free Dispensary and Maternity Hospital Indianapolis City Hospital St Vincent's Hospital and the Indiana Central Hospital for the Insane The course covers four years of eight and a half months This college is a member of the Association of American Medical Colleges The Dean is Dr Henry Jameson, Newton Claypool Bldg Total fees per term, $100 The total enrolment for 1906-7 was 227 graduates 70 The next session begins Sept 10 1907 and ends May 20, 1908

Eclectic Medical College of Indiana—This school was organized in 1900 It had 12 students and 3 graduates in 1907 The Dean is Dr T M Culver The next session begins Sept 17 1907 and ends April 15 1908

Physio Medical College of Indiana.—This school was organized in 1873 and has a faculty of 47 The course is four years of eight months each Total fees for each year $90 The Secretary is Dr C T Bedford Newton Claypool Bldg Total enrolment 1906-7 was 25, graduates 7 The next session begins Sept. 11, 1907, and closes May 9, 1908

IOWA.

Iowa, population 2,391,633, has five medical colleges The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 7 987 In Des Moines, population 62,139, is the College of Medicine of Drake University In Sioux City, population 31,701, is the Sioux City College of Medicine In Keokuk, population 14,803, is the Keokuk Medical College, College of Physicians and Surgeons Board and lodging may be had in Des Moines for $15 a month and upward, and in the other cities named for from $2 50 to $5 per week

Des Moines

Drake University College of Medicine—This school was organized in 1882 under the name of the Iowa College of Physicians and Surgeons In 1900 it became affiliated with Drake University The faculty consists of 20 professors and 32 assistants a total of 52 The Mercy and Methodist hospitals 200 beds, and a dispensary furnish clinical material The college is a member of the Association of American Medical Colleges The requirement for admission is a four year high school education or its equivalent The work covers four years of nine months each The total fees for the first two years are $107 each for the last two years $80 each The Dean is Dr D S Fairchild The total registration for 1906-7 was 76, graduates 17 The twenty fifth session begins Sept. 16, 1907, and ends June 18, 1908

Iowa City

College of Medicine of the State University of Iowa—This department was organized in 1870 The faculty is made up of 10 professors 17 lecturers demonstrators and assistants a total of 17 The University Hospital built in 1897 at a cost of $50 000 supplies the clinical material The school is a member of the Association of American Medical Colleges The course of study covers four years of thirty six weeks each Total fees for each year are $50 The Dean is Dr James R Guthrie Dubuque Vice Dean, Dr Walter L Bierring Iowa City Total number of students registered for 1906-7 was 272, graduates 52 The thirty eighth session opens Sept 18, 1907, and ends June 12, 1908

College of Homeopathic Medicine of the State University of Iowa—This was organized in 1877 The faculty is composed of 9 professors and 10 lecturers and assistants, a total of 19 The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa The fees are also the same. The Dean is Dr George Royal Des Moines Total registration for 1906-7 was 44 graduates 4 The thirty first session begins Sept. 18 1907, and ends June 12, 1908

Keokuk.

KEOKUK MEDICAL COLLEGE, COLLEGE OF PHYSICIANS AND SURGEONS —In 1849 the College of Physicians and Surgeons Keokuk was organized and four years later it became the Medical Department of the University of Iowa continuing as such until 1870 when the original name was resumed. In 1899 it united with the Keokuk Medical College organized in 1890 taking the above name St Joseph's Hospital having 100 beds furnishes clinical material The faculty is composed of 21 professors and 7 assistants and demonstrators 28 in all The course covers four years of eight months each The total fees for the first year are $16 for the second $61 for the third $64 and $61 for the last year The Secretary is Dr W B La Force Total registration for 1906-7 was 127 graduates 30 The next session begins Sept 17 1907 and ends May 13 1908

Sioux City

SIOUX CITY COLLEGE OF MEDICINE—This school was organized in 1891 The faculty consists of 24 regular professors besides a corps of assistants. Clinical material is supplied by St Joseph St Vincent and Samaritan hospitals and a College Dispensary The college is a member of the Association of American Medical Colleges The course covers four years of nine months each The college is affiliated with Morning Side College a literary and scientific institution and after 1910 two years of academic work in the arts and sciences will be necessary for matriculation in addition to the four year high school course now requisite Matriculation fee payable but once $5 tuition each year $60 Hospital fees, $5 graduating fees $20 Total enrolment for 1906-7 was 29 graduates 10 The President is Dr F E Franchere The eighteenth session opens Sept 17, 1907 and closes June 4 1908

KANSAS

Population 1,582 473, has three medical colleges Kansas Medical College is in Topeka, population 35,388 the Eclectic Medical University at Kansas City, and the School of Medicine of the University of Kansas, giving its first two years in Lawrence, population, 11 123, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 228,412 Board and lodging in all these places may be had for $3 to $5 per week

Kansas City

ECLECTIC MEDICAL UNIVERSITY —This school was organized at Kansas City Mo in 1898 moving to Kansas City Kan in 1907 Its faculty numbers 25 The curriculum covers four years of seven months each Fees about $70 each year, with a graduation fee of $15 The Dean is Dr Theodore Doyle Total number of students for 1906-7 was 36 graduates, 9 The tenth session begins Sept. 16 1907 and ends April 30 1908

Lawrence and Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE —Was organized in 1880 In 1905 it merged with three Kansas City Schools viz the Kansas City Medical College founded in 1869 the College of Physicians and Surgeons founded in 1893 and the Medico-Chirurgical College founded in 1896 This school is a member of the Association of American Medical Colleges The faculty including lecturers and clinical assistants numbers 79 The course covers four years of about nine months each The school has three dispensaries a hospital of its own and the use of one public and three private hospitals. A combined course of six years is offered conferring after six years the degrees of A B and M D The total fees are for the first two years $60 per year (and for non residents of the state $70) for the last two years $100 per year The Dean at Lawrence is Dr Mervin T Sudler The Dean at Kansas City is Dr George Howard Hoxie The number of students registered for 1906-7 was 115 graduates 29 The next session begins Sept. 11 1907 and will end June 4 1908

Topeka.

KANSAS MEDICAL COLLEGE MEDICAL DEPARTMENT OF WASHBURN COLLEGE.—This college organized in 1890 has a faculty of 28 professors and 12 lecturers and assistants 40 in all Christ's Hospital with 100 beds Topeka State Hospital the dispensary in the college building also supplies material for demonstration The college is a member of the Association of American Medical Colleges The college building affords ample laboratory and lecture-room space The course of study is a graded one covering four years of thirty weeks each The total fees are $75 each year The Dean is Dr William S Lindsay Secretary Dr William Mc Ver The total registration for 1906-7 was 82 graduates 14 The eighteenth session begins Sept. 3 1907 and closes April 22 1908

KENTUCKY

Kentucky, population 2,201,444, has six medical colleges They are all situated in Louisville, a city of 215 945 inhabitants and are as follows University of Louisville Medical Department Kentucky School of Medicine, Louisville Medical College Hospital College of Medicine, Southwestern Homeopathic Medical College and Louisville National Medical College Board and lodging in Louisville cost from $3 to $4 per week.

Louisville

KENTUCKY SCHOOL OF MEDICINE.—This school was organized in 1850 and has a faculty composed of 20 professors 27 lecturers instructors and assistants a total of 47 It is a lineal descendant of the Medical Department of Transylvania University then situated at Lexington Ky The College Hospital City Hospital and the college dispensary furnish facilities for clinical study This college is a member of the Association of American Medical Colleges The curriculum embraces four years of 30 weeks each The fees for the first three years are $75 each for the fourth year $100 The Dean is Dr W H Wathen 628½ Fourth Avenue Total number of students registered for 1906-7 was 270 graduates 66 The next session begins Dec 15 1907 and will end June 12 1908

LOUISVILLE MEDICAL COLLEGE.—This school was organized in 1869 and has a faculty of 12 professors and 18 instructors and assistants, 30 in all The City Hospital College Infirmary and a dispensary offer clinical facilities This school is a member of the Association of American Medical Colleges The course of study covers four years of six months each The fees are $75 each year with graduating fee of $25 The Secretary is Dr Irvin Abell Total registration for 1906-7 was 180 graduates 53 The next session opens Dec 11, 1907 and closes July 1 1908

HOSPITAL COLLEGE OF MEDICINE —This school is the medical department of Central University of Kentucky and was organized in 1873 The faculty is composed of 17 professors and 20 assistants lecturers etc a total of 37 The Gray Street Infirmary, City Hospital and a college dispensary furnish clinical material This college is a member of the Association of American Medical Colleges. The course covers four years of seven months each Total fees for each of first three years $75 and $100 for the fourth year The Dean is Dr P Richard Taylor Total enrolment for 1906-7 was 256 graduates 94 The thirty fourth session opens Jan 1 1908 and closes July 31 1908

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT —This school was organized in 1837 as the Louisville Medical Institute and in 1846 assumed its present title In 1907 it merged with the Kentucky University Medical Department It has a faculty of 28 professors and 27 lecturers and assistants a total of 55 The University Hospital City Hospital SS Mary and Elizabeth Hospital and the college dispensary furnish clinical material The course covers four years of 30 weeks each The fees will be $75 each year The total enrolment for 1906-7 was 456 graduates 158 The President is Dr J M Bodine the Dean is Dr T C Evans. The next session opens Dec. 1 1907 and closes June 30 1908

LOUISVILLE NATIONAL MEDICAL COLLEGE —Colored This was chartered in 1888 and shows a teaching force of 25 It has a four year course seven months to the year the fees are $58 $58 $55 and $50 for the four years respectively The Dean is Dr E S Porter Tenth and Walnut The attendance 1906-7 was 50 graduates, 13 The next session opens Oct. 2, 1907 and ends May 17 1908

SOUTHWESTERN HOMEOPATHIC MEDICAL COLLEGE —This college was organized in 1892 and has a faculty of 17 professors and 10 lecturers and assistants, 27 in all A college dispensary and Louisville City Hospital supply clinical material The curriculum covers four years of seven months each Total fees First and second years $80 third $70 and $65 for the fourth The Dean is Dr Geo S Coon Total number of students for 1906-7 was 11 graduates 1 The fifteenth session opens Sept. 26 1907, and closes April 24, 1907

LOUISIANA

Louisiana, having a population of 1,513 145, contains two medical colleges Medical Department of the Tulane University of Louisiana and New Orleans University They are both situated in New Orleans, a city of 300,625 people The cost of room and board is from $16 to $22 a month

New Orleans

MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA.—This school was organized in 1834 as the Medical College of Louisiana, and became by law in 1847 the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana Professors and instructors number over 60 Charity Hospital with 900 beds, furnishes clinical material The Milliken Memorial Hospital with a capacity for 200 children is also available The course covers four years of twenty eight weeks each Total fees for the first two years are $135 each and for the third and fourth $140 and $170 respectively The Dean is Dr Stanford E Chaille P O Drawer 261 The total enrolment for 1906-7 was 516 graduates, 91 The seventy fourth session begins Oct 21 1907 and will close May 20, 1908

FLINT MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY —Colored This school was organized in 1889 as the Medical College of New Orleans University Name changed to the above in 1901 The faculty consists of 10 professors, 6 lecturers and instructors 16 in all Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic This college is a member of the Association of American Medical Colleges The course covers four years of thirty weeks each Total fees $50 each year The Dean is Dr A. D Bush 1566 Canal St Total enrolment for 1906-7 was 51 graduates 9 The eighteenth session begins Oct 1 1907 and ends May 7 1908

MAINE

Maine, population 711,156, has one medical college, located in Portland, population 52,650 Board and lodging cost from $3 to $5 a week.

Portland.

MEDICAL SCHOOL OF MAINE —This the Medical Department of Bowdoin College was organized in 1820 It has 14 professors and 20 instructors total 34 Students of the first and second years are instructed in Brunswick while the third and fourth year classes are taught in Portland where are situated the Maine General Hospital and other clinical advantages. The course covers four years of eight months each The total fees are $120 for the first year, for the second and third, $110, and $110 for the fourth year The Dean is Dr Alfred Mitchell, Brunswick Total number of students in 1906-7 was 94, graduates 16 The next session opens Oct. 24, 1906, and closes June 25, 1908

MARYLAND

Maryland, with a population of 1,260,869, contains eight medical colleges, all located in Baltimore, a city with 531,313 inhabitants They are as follows School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Women's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College Board and lodging can be obtained for from $3 to $5 per week

Baltimore

Johns Hopkins Medical School —This is the Medical Department of Johns Hopkins University, and was organized in 1893 The faculty comprises 11 professors, 84 lecturers, clinical professors, associate professors, associates instructors and assistants, a total of 95 The Johns Hopkins Hospital and Dispensary, including a lying in department, furnishes clinical material The requirements for admission demand that the applicant either has (a) completed the chemical biologic course which leads to the A B degree in the university, (b) graduated at an approved college or scientific school and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and a knowledge of physics, chemistry and biology, such as may be obtained from a year's course, including laboratory instruction The school is a member of the Association of American Medical Colleges The course extends over four years of eight and one half months each The charge for tuition is $200 per annum, with no fees unless a microscope is rented that fee is $5 a year The Dean is Dr William H Howell, 232 West Lanvale St Total registration in 1906-7 was 264, graduates 70 The fifteenth session begins Oct. 1, 1907, and ends June 9, 1908

University of Maryland School of Medicine —This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland The faculty is composed of 14 professors, 46 associates and lecturers, etc, a total of 60 The University Hospital, Presbyterian Eye, Ear and Throat Charity Hospital, the Hospital for the Relief of Crippled and Deformed Children containing 40 beds the Maternity Hospital and a college dispensary furnish material for clinical study This school is a member of the Association of American Medical Colleges The course covers four years of eight months each The total fees for the first two years are $135 each for the third year, $125, and $155 for the final year The Dean is Dr R Dorsey Coale The total number of students registered in 1906 7 was 311 graduates, 62 The one hundred and first session begins Oct 1, 1907, and terminates June 1, 1908

Baltimore Medical College —This college was organized in 1881 and has a faculty of 59 The clinical material is furnished by the Maryland General Hospital having 200 beds the Maryland Lying in Hospital, the Mount Hope Retreat, St Vincent Infant Asylum, and the college dispensary This college belongs to the Association of American Medical Colleges The course covers four years of eight months each The Dean is Dr David Streett The total number of students registered in 1906 7 was 481, graduates 97 The twenty seventh session opens Sept. 20, 1907, and closes May 20, 1908

College of Physicians and Surgeons —This school was organized in 1872, and in 1878 Washington University School of Medicine established in 1827, was consolidated with it The faculty numbers 53 Clinical facilities are supplied by the Baltimore City Hospital, containing 225 beds, the Hospital for the Colored Race, containing 100 beds the Nursery and Child's Hospital with 150 beds, the Maryland Lying in Asylum and a college dispensary This school is a member of the Association of American Medical Colleges The work covers four years of eight months each Total fees are $115 $115 $115 and $135 for the respective years The Dean is Dr Charles F Bevan The total number of students registered in 1906 7 was 502 graduates, 75 The next session opens Oct 1, 1907, and terminates June 1, 1908

Maryland Medical College —This school was organized in 1898 and has a faculty of 19 professors, 25 associates lecturers etc 44 in all The Franklin Square Hospital West End Maternité and a college dispensary furnish clinical material The course of study covers four years of nine months each A matriculation fee of $5 and total laboratory fees for the four years of $55 are charged, tuition is $75 each year The Dean is Dr J B Schwatka 1003 North Broadway Total registration for 1906 7 was 125 graduates 29 The tenth session begins Oct 1 1907, and closes June 1, 1908

Woman's Medical College —This school was organized in 1882 and has a faculty of 15 professors 19 associates assistants and lecturers a total of 34 The Hospital of the Woman s Medical College and a college dispensary furnish clinical material The college is a member of the Association of American Medical Colleges The course covers four years of eight months each The total fees for the first three years are $106 each and $81 for the last year with $10 graduation fee The Dean is Dr S Griffith Davis 1230 Light St Total number registered for 1906 7 was 34, graduates 6 The twenty sixth session opens Oct 1, 1907 and closes May 31, 1908

Atlantic Medical College.—Homeopathic This school was organized in 1890 as the Southern Homeopathic Medical College but assumed the above name in 1907 The faculty consists of 9 professors and 28 lecturers and assistants a total of 37 The Maryland Homeopathic Hospital with 40 beds St Luke s Hospital with 35 beds and the college dispensary furnish clinical material The course covers four years of eight months each The fees are $100 for the first two years $75 for the third and $105 for the fourth year The Dean is Dr Eldridge C Price 1012 Madison Ave The enrolment for 1906 7 was 22, number of graduates, 11

The seventeenth session begins Oct. 2 1907, and ends June 4, 1908

Baltimore University School of Medicine.—This school organized in 1884, has a faculty of 8 professors and 16 lecturers demonstrators, etc., in all 24 The Baltimore University Hospital and the Lying in Hospital supply clinical material The course is four years of nine months each The fees are $100 each year The Dean is Dr Theodore Cooke Jr, 1808 No Charles St Total registration for 1906-7 was 23 graduates 5 The next session opens Oct. 1, 1907, and closes June 15, 1908

MASSACHUSETTS

Massachusetts, population 3,088,546, has four medical colleges Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School They are all situated in Boston, a city of 594,618 inhabitants Board and lodging can be obtained for from $5 to $7 per week

Boston.

Medical School of Harvard University —This was organized in 1782 and has a faculty of 32 professors 116 associates and assistants, etc., a total of 148 Clinical facilities are furnished by the Boston City Hospital, the Massachusetts General Hospital the Boston Lying in Hospital, the Boston Dispensary, the Infants Hospital, the Children s Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital Candidates for admission 'must present a degree in arts, literature, philosophy or science from a recognized college or scientific school with the exception of such persons as may be admitted by special vote of the faculty Each candidate is required to hand in the original note book in which he recorded the work performed by him in quantitative analysis, also to pass a written examination in theoretical and descriptive chemistry, and must have a knowledge of elementary organic chemistry If conditioned in chemistry six months are allowed in which to remove the condition Fees Matriculation $5, $200 each year The Dean is Dr William L Richardson 688 Boylston St The total registration for 1906-7 was 866, graduates, 64 The 126th session begins Sept 26, 1907 and ends June 25, 1908

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tufts College It has a faculty of 34 professors 61 assistants and lecturers etc., a total of 95 Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women Boston Dispensary, Cambridge Hospital St. Elizabeth s Hospital and Carney Hospital Graduates of an approved high school, college or university and also graduates of approved preparatory schools are admitted without examination, all others must pass an examination in English Latin, physics and mathematics including elementary algebra and plane geometry besides one elective subject to be chosen from American history, French German, chemistry or biology The course covers four years of eight months each The total fees are $150 each year The Secretary is Dr Frederic M Briggs 31 Massachusetts Ave Total number of students for 1906 7 was 376 graduates, 57 The fourteenth session begins Sept 25, 1907, and ends May 25, 1908

College of Physicians and Surgeons —This school was organized in 1880 and has a faculty of 27 professors and 18 lecturers and assistants a total of 45 Clinical facilities are furnished by the North End Dispensary Hospital, Union General Hospital and the city and state institutions The course of study covers four years of nine months each The total fees for the first year are $100 and for each of the other years about $110 with a graduation fee of $30 The Dean is Dr C H Cobb, Hotel Oxford Boston Total students registered 1906 7 was 123 graduates 26 The twenty eighth session begins Sept 18, 1907, and ends June 20, 1908

Boston University School of Medicine —Homeopathic This school was organized in 1873 In 1874 the New England Female Medical College, founded in 1848 was merged into it The faculty includes 20 professors 32 associates etc a total of 52 Clinical material is furnished by the Massachusetts Homeopathic Hospital containing 235 beds, an out patient department a maternity hospital and the Westborough Insane Hospital 800 patients Candidates who have taken their degrees in arts philosophy or science are not examined certificates of graduation from approved high and preparatory schools accepted in lieu of entrance examinations, all others are examined in English Latin French or German, history, mathematics physics and chemistry The course covers four years of eight months each Total fees for the first year are $105, for the second and third, $125 each, and for the last year $155 The Dean is Dr John P Sutherland 302 Beacon St Total registration for 1906 7 was 96 graduates, 13 The thirty fifth session opens Oct 3, 1907, and closes June 3 1908

MICHIGAN

Michigan, population 2,557,275, has five medical colleges Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 16,033 people Board and lodging cost from $2 50 to $5 a week Detroit, a city of 309,653 inhabitants, contains three medical colleges, as follows Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery Board and room can be obtained for $3 a week and upward

Ann Arbor

University of Michigan Department of Medicine and Surgery —This was organized in 1850 A class was graduated in 1851 and each subsequent year It has a faculty composed of 16 professors 48 associates instructors etc a total of 64 The University Hospital with 200 beds, furnishes clinical facilities The minimum requirements for admission provide that the applicant be a graduate of an approved high school and present certificates showing that he has completed three units of English and rhetoric two units of history, three units of mathematics including half a unit of plane trigonometry one unit of physics one unit of biology or one-half unit of zoology and botany and one unit of chemistry, two units of either German or French and two units of Latin (A unit equals one subject pursued for not less than four periods a week throughout the school year) Beginning with the session of 1909 10 the entrance requirements will be two years of college work equaling sixty hours of credit, as determined by the Department of Literature Science and the Arts of the University of Michigan these two years of collegiate work to include a year of chemistry physics and biology, including laboratory work and a reading knowledge of one modern language This school is a member of the Association of American Medical Colleges The curriculum embraces four years of nine months each The total fees for Michigan students for the entire course of four years is $450 and for others about $400 The Dean is Dr Victor C Vaughan The total registration for 1906 7 was 371 graduates 52 The fifty-eighth session begins Sept 24 1907, and will end June 18 1908

Homeopathic College University of Michigan —This department of the university was organized in 1877 A class was graduated in 1877 and each subsequent year The school has a faculty of 29 professors and 21 assistants total 50 a part of the teaching force is from the Department of Medicine and Surgery The Homeopathic Hospital containing 140 beds furnishes material for clinical teaching The course covers four years of nine months each The total fees for Michigan students are about $240 for the four years, and for other students about $295 The Dean is Dr W B Hinsdale. The enrolment for 1906 7 was 82 graduates 15 The thirty second session begins Sept. 24, 1907 and closes June 18, 1908

Detroit.

Detroit College of Medicine —This school was formed in 1885 by the union of Detroit Medical College organized in 1868 and the Michigan College of Medicine established in 1880 The faculty embraces 26 professors 72 lecturers instructors etc a total of 98 Clinical facilities are offered by the following hospitals St. Mary s and Harper each of which contains a free dispensary Woman s St Luke's the Children s Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges The course covers four years of eight months each Fees Matriculation paid once $5 tuition each term $65 hospital and laboratory tickets each $10 and diploma fee $30 The Secretary is Dr H O Walker Total enrolment for 1906-7 was 158, graduates 68 The twenty third session begins Sept. 18 1907, and closes May 28 1908

Michigan College of Medicine and Surgery —Organized in 1888 In 1905 consolidated with the Saginaw Valley Medical College The faculty numbers 86 The Dean is Dr Hal C Wyman Registration for 1906-7 was 6 no graduates The next session begins Sept. 15 1907, and ends June 1 1908

Detroit Homeopathic College.—This was organized in 1899 and has a faculty of 36 Grace Hospital and a college dispensary are available for study of clinical cases The course embraces work for four years of eight months each Fees From $70 to $90 per year The Dean is Dr D A MacLachlan Registrar J M Griffin Total enrolment for 1906 7 was 29 graduates 9 The next session begins Sept. 15 1907 and will close May 15 1908

MINNESOTA.

Minnesota population 1 971 949, contains three medical colleges The College of Medicine and Surgery of the University of Minnesota, the College of Homeopathic Medicine and Surgery of the University of Minnesota, and the Minneapolis College of Physicians and Surgeons, the Medical Department of Hamline University They are all situated in Minneapolis Minneapolis and St Paul are practically one city, with a total population of 386,150 The average cost of board and lodging is $20 a month

Minneapolis

College of Medicine and Surgery University of Minnesota —This department of the University of Minnesota was created in 1883 and performed at that time the function of State Board of Medical Examiners, conferring after examination the degrees of B M and M D but doing no teaching In 1888, by the consolidation and absorption of the Minnesota Hospital Medical College and the St Paul Medical College, its present status was assumed. The faculty includes 43 professors and clinical professors and 9 associate and assistant professors 36 demonstrators and instructors and 16 assistants a total of 104 Eight hospitals in the twin cities besides the University Dispensary located near the campus and the St Paul Dispensary under the control of the college afford material for clinical study The curriculum covers four years of nine months each. The entrance requirements are two years of university work in addition to four years of high school work Total fees for each year $100 microscope rental $4 to $7 per annum The total number of students registered in 1907 was 188 graduates 37 The Dean is Dr F F Wesbrook The next session opens Sept. 17, 1907 and closes June 6 1908

College of Homeopathic Medicine and Surgery —This is a department of the University of Minnesota and was organized in 1888 The faculty comprises 22 professors and 40 assistants 62 in all Instruction in the primary branches is received in common with the students of the College of Medicine and Surgery The course is graded extending over four years of nine months each The total fees for the first two years are $100 each and $80 each for the last two years The Dean is Dr Eugene L. Mann Total number of students registered in 1906-7 was 14 graduates 6 The next session opens Sept 16 1907 and closes June 9 1908.

Minneapolis College of Physicians and Surgeons —Medical Department of Hamline University This was organized in 1883 Its faculty is composed of 30 professors and 17 instructors a total of 47 Clinical work is offered in City Hospital, Asbury Methodist Hospital St Barnabas and St Mary s hospitals in Minneapolis Luther Hospital City and County and St Joseph s in St Paul and the college dispensary This school belongs to the Association of American Medical Colleges The course of study covers four years of eight and a half months each Total fees first year $90 second year $92 50 and for each of the last two $80 The Dean is Dr George C Barton Total number of students 1906 7 was 109 graduates 19 The next session begins Sept 17, 1907, and ends June 10, 1908

MISSISSIPPI

Mississippi, population 1,682,105, has two medical colleges: The Medical Department of the University of Mississippi, located at Oxford, a city of 2,000 inhabitants, and the Mississippi Medical College, at Meridian, with a population of 15,079

Meridian

Mississippi Medical College.—This school was organized in 1906 and has a faculty of 14 The total enrolment for 1906 7 was 106 graduates 22 The Dean is Dr N L Clark The second session begins Oct 1 1907 and ends April 1, 1908

Oxford

University of Mississippi Medical Department —This school was organized in 1903 The faculty consists of 6 professors and 2 assistants, a total of 8 Each college term extends over nine months. Only two years of the medical course are given The school is a member of the Association of American Medical Colleges Dr W S Leathers is the Acting Dean The total registration in 1905 6 was 18 graduates none The next session begins Sept 21, 1907, and ends June 7, 1908

MISSOURI

Missouri, population 3,320,405, has eleven medical colleges. St Louis population 612 279, contains seven of these viz St Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St Louis University, Washington University Medical Department, Barnes Medical College and the Hippocratean College of Medicine Board and lodging can be procured for from $3 50 to $5 a week Kansas City, which, with Kansas City, Kansas, has a total population of 228,412, has two colleges, namely University Medical College and the Hahnemann Medical College of Kansas City Room and board can be obtained in this city for from $3 to $5 a week Ensworth Central Medical College is located in St Joseph, population 110, 479 Board and room can be had for from $3 50 to $5 a week The Department of Medicine of the University of Missouri is at Columbia, a town of 5,651 Board and lodging can be obtained at Columbia for from $2 to $5 a week

Columbia

Department of Medicine of the University of Missouri —This department was organized at St Louis in 1845 was discontinued in 1850 but was reorganized at Columbia in 1872 The faculty includes 11 professors, 19 assistant professors lecturers etc. a total of 30 Clinical facilities are supplied by the Parker Memorial State Hospital The course covers four years of nine months each The University offers also a combined course of six years conferring degrees in both arts and medicine. The candidate for entrance must present beside the diploma from a recognized four year high school, credentials of college work as follows English physics, 6 hours inorganic chemistry 6 hours This school is a member of the Association of American Medical Colleges There is no charge for tuition the only expenses being a library fee of $10 each year and small laboratory fees The Dean is Dr A W McAlester Total registration of students for 1906 7 was 66 graduates 2 The next session opens Sept. 9, 1907, and closes June 3, 1908

Kansas City

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department and in 1888 was reorganized under its present name Its faculty comprises 30 professors and 35 lecturers and assistants a total of 65 Clinical material is furnished by the University Hospital with 100 beds the City Hospital German Hospital Home for the Aged containing 147 beds the Sisters Hospital Scarritt and St Margaret s hospitals the Children s Home St Joseph s Orphan Asylum and the college dispensary This school is a member of the Association of American Medical Colleges The course of study covers four years of thirty weeks each and the work is graded The total fees for each year are $100 The Dean is Dr J D. Logan 1208 Wyandotte St. The total number of students registered in 1906 7 was 238 graduates 57 The twenty sixth session begins Sept. 6 1907 and ends May 15 1908

Kansas City Hahnemann Medical College —This school was formed by the union of the Kansas City Homeopathic Medical College organized in 1888 and the Kansas City University College of Homeopathic Medicine and Surgery It has a faculty of 41 The City Hospital, Homeopathic Hospital the Sanitarium Scarritt, University Women and Children s German, Bethany and Children s hospitals and a college dispensary supply clinical material The course covers four years of seven months each. The Dean is Dr Frank Elliott, 1023 Grand Ave Total registration for 1906 7 was 74 graduates 11 The next session begins Sept. 12 1907, and closes April 27, 1908

St Joseph.

The Ensworth Central Medical College —This college was organized in 1876 as the St. Joseph Hospital Medical College In 1882 it merged with the College of Physicians and Surgeons to form the St Joseph Medical College In 1888 changed name to Ensworth Medical College In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth Central Medical College The faculty is composed of 28 professors 12 lecturers and assistants, 40 in all The Ensworth Deaconess Hospital, with 100 beds, St Joseph with 250 beds, City Hospital, containing 40 beds, the State Hospital, No 2, which is open to the students once a week, and a college dispensary furnish clinical material The curriculum covers four years of eight months each The fees are $75 for each of the first three years the fourth year, $95 The Secretary is Dr T E Potter Total enrolment for 1906 7, 117, graduates 26 The next session opens Sept 16, 1907, and will close about May 11, 1908

St Louis

Washington University Medical Department —This school was organized in 1891 from the St Louis Medical College, which was founded in 1842 In 1899 the Missouri Medical College, organized in 1840, was added The faculty comprises 45 professors, 45 lecturers and instructors a total of 90 Clinical material is furnished by the St Louis Mullanphy Hospital, Washington University Hospital and Dispensary, Washington University Lying in Hospital Bethesda Hospital, Maternity Hospital, Martha Parson s Children's Hospital and O Fallon Dispensary This school is a member of the Association of American Medical Colleges The course is four years of eight months each The total fees are For the first year, $130 75, second, $128 75, third, $115 25, and for the fourth, $101 25 The Dean is Dr Robert Luedeking Total enrolment for 1906 7 was 215, graduates 50 The next session opens Sept 26, 1907, and closes May 22, 1908

St Louis University Medical Department —This school was organized as the Marion Sims Beaumont Medical College in 1901 by the union of the Marion Sims College of Medicine with the Beaumont Hospital Medical College It became the Medical Department of St Louis University in 1903 The faculty is composed of 38 professors, 67 lecturers and assistants, a total of 105 Clinical facilities are offered by Alexian Brothers Hospital, with 250 beds, Rebekah Hospital 50 beds, Mt. St Rose Throat and Chest Hospital, 150 beds, St John s Hospital, 125 beds, St Ann s Lying in Hospital, 200 beds, St Mary's Infirmary, containing 150 beds, the City Hospital and Insane Asylum and Grand Avenue Dispensary This school is a member of the Association of American Medical Colleges The curriculum covers four years of seven months each The total fees for the first year are $100, for the second third and fourth, $95 each The Secretary is Dr H W Loeb 537 North Grand Ave Total registration for 1906 7 was 268, graduates, 56 The next session opens Oct 1, 1907, and closes May 19, 1908

St Louis College of Physicians and Surgeons —This school was organized in 1878, and has a faculty of 24 professors 15 lecturers instructors etc, a total of 39 The resources for clinical instruction are Jefferson Hospital, City Hospital with 600 beds Female Hospital having 250 beds, City Insane Asylum, City Poorhouse and the college dispensary The course of study covers four years of seven months each Total fees for the first year are $80 second and third $75 each and $85 for the fourth year The Dean is Dr Waldo Briggs, 2600 Gamble St Total registration for 1906 7 was 270, graduates, 44 The next session begins Sept 12 1907 and ends May 1, 1908

Barnes Medical College —This school was organized in 1892 and has a faculty of 39 professors and 30 lecturers and assistants, a total of 69 Clinical advantages are offered by Centenary Hospital with 150 beds City Hospital and the college dispensary The course of study covers four years of eight months each The total fees for the first three years are $80 each year and $90 for the fourth year The Secretary is Dr C M Ament, 1025 Missouri Trust Bldg Total registration for 1906-7 was 352, graduates 79 The next session opens Sept 9, 1907, and closes May 9 1908

American Medical College —Eclectic This was organized in 1873 and has a faculty of 17 professors St Louis City Hospital and a college dispensary supply clinical material This college is a member of the National Confederation of Eclectic Medical Colleges The course of study covers four years of seven months each The total fees are Tuition $75 per year, dissecting material $5 per year for four years final examination and graduation fee, $25 Total registration for 1906-7 was 38, graduates 9 The Dean is Dr P C Clayberg 2830 Lafayette Ave The next session opens Sept 16 1907 and closes April 21, 1908

Homeopathic Medical College of Missouri —This was organized in 1857 and has a faculty of 18 professors and 6 assistants total 24 The curriculum covers four years of seven months each Fees First year $80 second, $75, third $60 and $75 for the fourth year The Dean is Dr L C McElwee 1221 North Grand Ave Total registration for 1906-7 was 44 graduates 11 The next session begins Sept 10, 1907 and ends April 23 1908

Hippocratean College of Medicine.—A night school organized in 1907 situated at 3412 Morgan St The Dean is Dr Emory Lanphear

NEBRASKA

Nebraska, population 1,068 120 has four medical colleges The University of Nebraska College of Medicine and John A Creighton Medical College at Omaha, population 113,361, and Lincoln Medical College, and the Nebraska College of Medicine at Lincoln population 44,243 Board and lodging can be obtained for from $3 to $5 a week

Lincoln and Omaha

University of Nebraska College of Medicine —This was organized in 1880 as the Omaha Medical College In 1902 an affiliation was entered into with the University of Nebraska the name being changed to the College of Medicine of the University of Nebraska The first two years are given at Lincoln The last two years are given only at Omaha The faculty is composed of 33 professors and 42 lecturers and instructors total 75 The Douglas County Immanuel Jennie Edmunson Wise Memorial and Omaha Methodist hospitals, the Child Saving Institute the Bancroft Street Rescue Home and the college dispensary furnish material for clinical study The college can give an interneship to every capable student and offers a *cum laude* degree at the close of a fifth year in hospital or in research laboratory For admission 32 points or 16 units of high school work are demanded after Jan 1 1908 one full year of college work above the high school course will be required The University offers an optional six year combined course for the B S and M D degrees The fees are approximately $100 per annum The college is a member of the Association of American Medical Colleges Total number of students enroled in 1906 7, 82 graduates 16 The Dean is Dr Henry B Ward University of Nebraska Lincoln the Dean of the Clinical Department is Dr Harold Gifford Omaha The next session begins Sept. 17, 1907, and ends May 21, 1908

Lincoln.

Lincoln Medical College —Eclectic This was organized in 1889, and has a faculty of 22 This college is a member of the National Confederation of Eclectic Medical Colleges The course of study covers four years of thirty weeks each The total fees for the first year are $80, second and third $75 each and $85 for the fourth year or $250 for all four years together The Dean is Dr F L Wilmeth Total number of students for 1906 7 was 50 graduates 12 The next session begins Sept 5, 1907, and ends May 8, 1908

Nebraska College of Medicine.—This college was organized in 1905 Its faculty consists of 23 professors and 5 assistants a total of 28 Its course covers four years of eight months each The Dean is Dr J F Stevens Registration of students during 1906-7 was 27, graduates 7 The third session begins Sept 17, 1907, and ends May 25, 1908

Omaha

John A Creighton Medical College —This school, organized in 1892 is the Medical Department of Creighton University and has a faculty of 34 professors and 23 associates lecturers and assistants a total of 57 The clinical facilities are those of St Joseph's Hospital containing 300 beds, St Bernard s Hospital with 256 beds, Omaha General Hospital, with 100 beds Douglas County Hospital Mercy Hospital and the college dispensary The school is a member of the Association of American Medical Colleges The course of study embraces four years of eight months each The total fees for the first two years are $90 each and $85 for each of the last two years The Dean is Dr D C Bryant McCague Bldg Total number of students registered in 1906 7 was 167, graduates 35 The sixteenth session begins Sept 3, 1907 and ends May 3, 1908

NEW HAMPSHIRE

New Hampshire, population 429,118, contains one medical college, located in Hanover, population 1,884

Hanover

Dartmouth Medical School —This is the Medical Department of Dartmouth College and was organized in 1797 Its faculty is made up of 18 professors and 3 instructors 21 in all The Mary Hitchcock Memorial Hospital a cottage hospital of 36 beds, supplies the clinical material Applicants for admission must possess an education at least equivalent to graduation from a registered high school The course covers four years of seven and a half months each Fees $100 each year The Dean is Dr William T Smith The total number of students registered for 1906 7 was 62 graduates 11 The work for the first and second years begins with that of the academic department commencing Sept 19 1907 and closing June 20 1908 for the advanced classes it begins Aug 6, 1907, and ends March 27, 1908

NEW YORK

New York State, population 7,901 754, has eleven medical colleges Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Forham University School of Medicine, are located in New York City, population 3,716,139 Board and lodging can be obtained for from $5 to $7 a week Albany Medical College is in Albany, a city of 93,920 people, where board and room can be had for from $4 to $5 a week The University of Buffalo Medical Department is situated in Buffalo, population of 381 403 Here board and lodging can be obtained for from $3 50 to $5 a week The College of Medicine, Syracuse University, is in Syracuse, a city of 114,443 inhabitants Board and lodging can be obtained for from $3 50 a week upward

Albany

Albany Medical College —This school was organized in 1838, and in 1873 it assumed its present relations as Medical Department of Union University The faculty is composed of 14 professors and 71 lecturers instructors and assistants, a total of 85 Albany, St Peter s Child s and County hospitals South End Dispensary Eye and Ear Infirmary and the Albany Hospital for Incurables also the free dispensaries connected with each are open to students for clinical study The curriculum covers four years of seven and one half months each. Fees First year, $130, second year, $145, third year, $120, and fourth year $130 The Dean is Dr Samuel B Ward. Total registration for 1906-7 was 195 graduates 40 The next annual session opens Sept 24 1908, and closes May 5, 1908

Buffalo

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 39 professors and 45 assistants, lecturers, etc., a total of 84 Buffalo General Hospital, Erie County and German hospitals the German Deaconess Hospital of the Sisters of Charity and a college dispensary supply clinical material This school is a member of the Association of American Medical Colleges The course covers four years of eight months each The tuition is $125 each year this does not include laboratory fees The Dean is Dr Matthew D Mann 37 Allen St. Total registration for 1906-7 was 214 graduates, 59 The sixty second session opens Sept 23, 1907, and closes May 29, 1908

New York City

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation that of Medical Department of Columbia University, was assumed in 1860 The faculty embraces 38 professors and 112 demonstrators instructors etc., a total of 150 The Vanderbilt Clinic Roosevelt Bellevue New York Presbyterian St. Luke's and General Memorial hospitals Hospital for the Ruptured and Crippled St Mary's Free Hospital for Children, Willard Parker Scarlet Fever and Reception, Riverside New York Eye and Ear Infirmary Foundling and the Babies Hospital and others offer clinical advantages The work covers four years of eight months each The Dean is Dr Samuel W Lambert The total fees for the first year are $225 for the second and third $250 and $275 for the fourth year Total registration for 1906-7 was 387 graduates, 93 The next session begins Sept. 25 1907 and ends June 10, 1908

Long Island College Hospital.—This was organized in 1858 and has a faculty of 20 professors and 120 assistants instructors etc. a total of 140 Long Island College Hospital, containing 300 beds Polhemus Memorial Clinic Dudley Memorial and Hoagland Laboratory are a part of the college. Members of the faculty attend Kings County, St. John's Brooklyn Norwegian Williamsburg Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study The course covers four years of thirty weeks each Fees First year $195 second $200 third, $160 and $195 for the fourth year The Secretary is Dr Joseph H Raymond Total registration 1906-7 was 342 graduates 87 The fiftieth session opens Oct 1 1906, and closes June 6 1908

Cornell University Medical College.—This department of Cornell University was established in 1898 The faculty is composed of 49 professors and 124 instructors and assistants a total of 173 The City Hospital having 1 000 beds Bellevue Hospital New York Hospital Presbyterian Willard Parker and Reception with 200 beds New York Skin and Cancer St Francis having a capacity of 230 beds St. Vincent's with 200 beds the Manhattan Eye and Ear Infirmary and a large college dispensary furnish clinical resources The first two years of the course are taken at Ithaca or at New York. Fees First year $100 second and third $185 each and $200 for the fourth year The Dean is Dr William M Polk. Total registration for 1906-7 was 342 graduates 72. The next session opens Sept. 25 1907, and closes June 10 1908

University and Bellevue Hospital Medical College.—This is a department of the New York University and was founded in 1898 by the union of the New York University Medical College organized in 1841, and the Bellevue Hospital Medical College organized in 1861 The faculty is composed of 39 professors and 64 instructors assistants etc. in all 103 Bellevue and City hospitals, hospitals of the workhouse and almshouse Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals Riverside Hospital for Contagious Diseases Randall's Island Presbyterian St. Luke's St Vincent's General Memorial Gouverneur Columbus, Harlem, New York Foundling and the Society for the Lying in hospitals the New York Eye and Ear Infirmary and a college dispensary furnish clinical material The course covers four years of eight months each. Fees First year $185 second and third $180 each and $195 for the fourth year The Dean is Dr Egbert Le Fevre Total registration for 1906-7 was 502 graduates 68 The next session opens Oct. 2, 1907, and closes June 3, 1908

New York Homeopathic Medical College and Hospital.—This school organized in 1858 has a faculty of 35 professors and 44 lecturers, instructors etc. 79 in all. Flower Hospital adjoining the college and having an out patient department, Metropolitan Hospital New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children furnish clinical facilities The course covers four years of seven months each. Total fees for the first year, $130 second, $130, third $125 and $155 for the fourth year The Dean is Dr W H King 64 West Fifty first St. Total registration for 1906-7 was 109 graduates 22 The next session begins Oct 1 1907 and ends May 14, 1908

New York Medical College and Hospital for Women—Homeopathic. This school was organized in 1863 and has a faculty of 23 professors 20 lecturers and assistants total 43 The college hospital and dispensary, the Memorial Hospital for Women Metropolitan Ophthalmic and the Laura Franklin Free Hospital for Children afford clinical material The course covers four years of twenty six weeks each. Fees First year $150 second $150 third $135 and $155 for the fourth year The Dean is Dr Helen Cooley Palmer 5 West Eighty second St. Total registration for 1906-7 was 24 graduates, 4 The next session opens Oct. 1 1907, and closes May 14 1908

Eclectic Medical College of the City of New York.—This was organized in 1865 and has a faculty of 15 professors and 26 lecturers demonstrators etc 41 in all A college dispensary Beachonian Dispensary Manhattan and Red Cross hospitals and Muncie Sanatorium supply clinical facilities The work covers four years of seven months each The total fees For each of the first three years, $125 and $155 for the fourth year The Dean is Dr George W Boskowitz Total registration for 1906-7 was 83 graduates 11 The next session opens Sept. 25, 1907 and closes May 1, 1908

Fordham University School of Medicine.—This school was organized in 1905 and has a faculty of 25 professors and 3 assistants, a total of 28 The Fordham Hospital, the St Francis Hospital, with 300 beds, and Lincoln Hospital with 200 beds furnish clinical material The course of instruction covers four years of nine months each Fees First year $100 second and third years $185 each The total registration for 1906-7 was 24 No class has yet been graduated No students beyond the third year will be admitted during 1907-8 The Dean is Dr James J Walsh The third session begins Sept. 26, 1907, and ends June 10 1908

Syracuse.

College of Medicine Syracuse University.—This school was organized in 1872 as the Medical Department of Syracuse University The faculty is composed of 14 professors and 42 lecturers, instructors etc. in all 56 Clinical facilities are furnished by St. Joseph's Hospital Hospital of the Good Shepherd Syracuse Hospital for Women and Children Onondaga County Orphan Asylum and the Syracuse Free Dispensary The course covers four years of eight months each The average total fees for each year are $167.25 The Dean is Dr Gaylord P Clark 619 West Genesee St Total number of students registered for 1906-7 was 153 graduates 24 The next session opens Oct. 1, 1907 and closes June 10, 1908

NORTH CAROLINA

North Carolina, population 2,031,740, has four medical schools, one of which gives only the first two years of the medical course The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 13 934 The Leonard School of Medicine is at Raleigh The North Carolina Medical College is at Charlotte, population 20,030 Wake Forest School of Medicine is at Wake Forest, population 823

Chapel Hill and Raleigh

University of North Carolina Medical Department.—This school was organized in 1891 and formerly gave only the work of the first two college years at Chapel Hill In 1902 a department was established at Raleigh in which the last two years are given The faculty numbers 30 It is a member of the Association of American Medical Colleges Total fees are $85 per year Board room light and heat may be had for from $84 to $102 per college year The President is Dr F P Venable Chapel Hill The Dean of the Department at Raleigh is Dr H A Royster The number of students enroled in 1906-7 was 114 graduates 10 The next session will begin Sept. 9, 1907, and end June 5 1908

Charlotte

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 12 professors and 12 assistants a total of 24 The Presbyterian Hospital in Charlotte supplies the clinical facilities The course covers four years of eight months each Fees First three years $85 each and $100 for the fourth year The Dean is Dr Walter O Nisbet The total registration for 1906-7 was 69, graduates 14 The next session begins Oct. 1, 1907 and closes May 1, 1908

Raleigh.

Leonard School of Medicine.—Colored This department of Shaw University was established in 1882 by the American Baptist Home Mission Society It has a faculty of 10 A hospital and dispensary supply clinical material The course covers four years of seven months each The total fees for each year are $75 The dormitory plan is adopted generally and board and room cost $2 a week The Dean is Dr James McKee Total enrolment for 1906-7 was 149, graduates, 24 Next session opens Oct. 1 1907, and closes May 9, 1908

Wake Forest

Wake Forest School of Medicine.—This school was organized in 1902 The faculty numbers 10 It only gives the first two years of the medical course which is an election for the B S degree after 1908 Each annual course extends over nine months The school is a member of the Association of American Medical Colleges The fees are $100 a year During 1906-7 the enrolment was 39 The Dean is Dr Watson S Rankin The next session opens Sept. 5, 1907, and closes May 25, 1908

NORTH DAKOTA.

North Dakota, population 383,226, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University Only the first two years of the medical course are given, which may be elected as the last two years of the A.B degree.

University

University of North Dakota College of Medicine.—This department was organized in 1905 The faculty is composed of 5 professors and 13 instructors a total of 18 The course consists of two years academic work and two years of medical college subjects occupying nine months each year The completion of this work in a satisfactory manner entitles the student to the A B degree from this institution and a certificate of completion of the medical subjects embraced in the course This school is a member of the Association of American Medical Colleges The total fees for each of the medical subject years are $50 The Dean is M. A Brannon. The enrolment during 1906-7 was 15 The third session begins Sept. 24, 1907, and closes June 18 1908

OHIO

Ohio, population 4,400 155, has nine medical colleges Four of these, the Medical College of Ohio Eclectic Medical Institute, Miami Medical College and Pulte Medical College, are located in Cincinnati, a city of 332,934 inhabitants Board can be procured in Cincinnati for from $3 to $5 per week Cleveland, population 414,950, contains three medical schools Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College Board and lodging can be had for from $2 50 to $5 a week Columbus, population 135,487, contains one medical college, the Starling Ohio Medical College Board and lodging cost from $2 50 to $5 per week Toledo, with 145,901 people, has one medical school, the Toledo Medical College Board and room can be had for from $3 to $5 a week.

Cincinnati.

MEDICAL COLLEGE OF OHIO —This is the Medical Department of the University of Cincinnati, and was organized in 1819 It has a faculty of 28 professors and 33 lecturers and assistants, a total of 61 Good Samaritan Hospital, with 100 beds, Cincinnati Hospital, with 500 beds, and a college dispensary furnish clinical facilities The course covers four years of eight months each The lecture fees are $125 each year, matriculation fee of $5, payable but once, and a graduation fee of $25 Total registration of students for 1906-7 was 133 graduates 35 The Secretary is Dr Albert V Phelps The next session begins Oct 1, 1907, and ends June 1, 1908

MIAMI MEDICAL COLLEGE —This school was organized in 1852 and has a faculty of 24 professors and 26 lecturers and demonstrators, a total of 50 The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary This college is a member of the Association of American Medical Colleges The curriculum embraces four years of eight months each The total fees are, for the first year, $130, for the second and third $125 and $150 for the fourth year The Dean is Dr J C Oliver 628 Elm St The total registration for 1906-7 was 75, graduates, 16 The next session opens Oct 1, 1907, and closes June 1, 1908

ECLECTIC MEDICAL INSTITUTE —This school, organized in 1845, has a faculty of 17 professors and 12 lecturers and assistants a total of 29 The Seton Hospital, Cincinnati Hospital and the Seton Hospital dispensary furnish clinical material It is a member of the National Confederation of Eclectic Medical Colleges The course covers four years of thirty-two weeks each The fees are $90 for each year The Dean is Dr Rolla L Thomas 792 East McMillan St Total enrolment 1906 7 was 97, graduates 31 The next session begins Sept 16, 1907, and closes April 29 1908

PULTE MEDICAL COLLEGE —Homeopathic This was organized in 1872 and has a teaching force of 20 professors and 14 assistants, 34 in all Pulte Hospital Cincinnati Hospital, Bethesda Hospital Home of the Friendless and Foundlings and a college dispensary supply clinical material The curriculum covers four years of seven months each Fees First year, $80, for the second and third $75 each and $100 for the fourth The Dean is Dr Charles F Walton Total enrolment for 1906 7 was 15 graduates, 5 The next session opens Oct 2, 1907, and closes May 26, 1908

Cleveland.

THE CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS —This school was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896 when it assumed its present title The faculty is composed of 31 professors, 30 lecturers, assistants instructors etc 61 in all Cleveland General Hospital, Cleveland City Hospital and a college dispensary supply clinical material This school is a member of the Association of American Medical Colleges The total annual fees are $130 The curriculum covers four years of eight months each The Dean is Dr R E Skeel 314 The Osborn Total enrolment for 1906-7 was 92, graduates, 13 The next term opens Oct 1, 1907, and closes May 20 1908

WESTERN RESERVE UNIVERSITY MEDICAL COLLEGE —The Medical Department was organized in 1843 Its faculty includes 21 professors 49 lecturers demonstrators and assistants a total of 70 Clinical facilities are furnished by Lakeside Hospital having 250 beds St Vincent s Hospital having about 150 beds, City Hospital with 250 beds, St Alexis Hospital, with 250 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals, and a tuberculous dispensary at the college This college is a member of the Association of Americal Medical Colleges The curriculum embraces four years of eight and one half months each Three years of college work are required for admission to first year of medical course The total fees are $125 for each year The Dean is Dr B L Millikin 1110 Euclid Ave Total enrolment for 1906 7 was 87, graduates 10 The next session begins Oct 1, 1907, and closes June 18, 1908

CLEVELAND HOMEOPATHIC MEDICAL COLLEGE.—This school was founded in 1897 by a consolidation of Cleveland University of Medicine and Cleveland Medical College the former of which was incorporated in 1850 The faculty includes 28 professors and 28 adjuncts lecturers, etc., 56 in all The clinical facilities are obtained from the Cleveland Homeopathic Hospital, the Cleveland City Hospital the Cleveland Maternity Hospital and a college dispensary The course embraces four years of thirty weeks each Total fees $125 per year The Dean is Dr George H Quay The number of students registered 1906 7 was 43 graduates 10 The next session opens Sept 25, 1907, and closes May 15, 1908

Columbus

STARLING OHIO MEDICAL COLLEGE.—This school began with the organization of Starling Medical College in 1847 The present name was adopted when the school merged with the Ohio Medical University which was organized in 1890 The faculty consists of 33 professors and 26 lecturers demonstrators etc a total of 59 Clinical material is furnished by the Protestant Hospital Hawke s Hospital State Hospital St Francis Hospital Lawrence Hospital, St Anthony s Hospital and college dispensaries This college is a member of the Association of American Medical Colleges The course covers four years of eight months each Fees, $100 per year, matriculation fee $5 graduation fee $10 The Dean is Dr George M Waters Enrolment of the two schools for 1906 7 was 202 graduates 39 The next session begins Sept 25, 1907, and ends May 20, 1908

Toledo

TOLEDO MEDICAL COLLEGE —The school was organized in 1882 and in 1904 became the Medical Department of Toledo University It has a faculty of 17 professors 15 lecturers and assistants in all 32 Toledo Hospital, St Vincent s and Robinwood Hospitals, Lucas County Infirmary Hospital Toledo Hospital for the Insane and a free dispensary supply clinical facilities The curriculum embraces four years of eight months each The fees are $75 for each year with a matriculation fee of $5 payable once The Dean is Dr Park L Myers 2730 Monroe St Total enrolment for 1906-7 was 20, graduates 8 The next session opens Oct 1, 1907, and closes May 20 1908

OKLAHOMA

Oklahoma, population 558,261, has two medical schools, the School of Medicine of the University of Oklahoma which is located at Norman a city of 2,225 inhabitants, and the College of Medicine of Epworth University, located at Oklahoma City, which has a population of 12,800

Norman

SCHOOL OF MEDICINE, UNIVERSITY OF OKLAHOMA —This school was organized in 1903 and gives only the first two years of the medical course, each session extending over a period of nine months Two courses are offered, one covering two years, at the completion of which a certificate is given the other a combined course of four years, leading to the degree of B S Students are encouraged to take the latter course The college has a faculty of 10, and is a member of the Association of American Medical Colleges Total registration for 1906-7 was 13 The Acting Dean is Dr R P Stoops The next session begins Sept 10 1907, and ends June 11, 1908

Oklahoma City

COLLEGE OF MEDICINE EPWORTH UNIVERSITY —This school was organized in 1904 The faculty consists of 22 professors and 3 assistants, instructors etc a total of 25 The Oklahoma City and St Anthony s hospitals Amie Rescue Home and a college dispensary furnish material for clinical instruction The course of study covers four years of seven months each The total fees are about $70 each year The Dean is Dr A K West The registration for 1906-7 was 16 graduates 1 The fourth session begins Oct 2, 1907, and ends May 10, 1908

OREGON

Oregon, population 461,451, has two medical colleges Medical Department Willamette University, located in Salem, a city of 4,258 people, and University of Oregon Medical Department, in Portland, a city of 98,655 population Board and lodging may be obtained in Salem for from $3 to $5 per week and in Portland for from $4 to $6

Portland

UNIVERSITY OF OREGON MEDICAL DEPARTMENT —This department of the State University was organized in 1887, and has a faculty of 14 professors and 22 assistants, lecturers, etc a total of 36 Good Samaritan and St. Vincent s hospitals, containing 200 and 350 beds, respectively, and Multomah County Hospital furnish good material for clinical study Out patient clinics are held at Pilgrim Chapel This school is a member of the Association of American Medical Colleges The course is four years of seven and one-half months each Fees First year, $142 50, second $137 50 third $107 50 and for the fourth $57 50 The Dean is Dr Simeon E Joseph The total number of students for 1906 7 was 86, graduates 20 The next session opens Sept. 16 1907, and closes May 1, 1908

Salem.

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY —The school was organized in 1864 The faculty consists of 16 professors and 3 assistants a total of 19 Clinical facilities for study are supplied by Salem Hospital and a college dispensary This school is a member of the Association of American Medical Colleges The course embraces four years' work of seven months each Fees First and second years $110 each third $75, and $50 for the fourth year The Dean is Dr W H Byrd Total enrolment for 1906-7 was 45, graduates, 16 The next session begins Sept 15, 1907, and ends May 1, 1908

PENNSYLVANIA.

Pennsylvania, population 6 824,115, has seven medical colleges Of these Philadelphia, having a population of 1,367,716, contains six, as follows University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico Chirurgical College of Philadelphia and Temple College Department of Medicine Board and lodging cost from $4 a week upward. The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 345,043 people The cost of board and lodging is from $4 to $6 a week.

Philadelphia.

University of Pennsylvania Department of Medicine —This is the first medical college established in this country having been organized in 1765 as the Medical Department of the College of Philadelphia the first degree was granted in 1768 When from the College of Philadelphia the University of Pennsylvania was organized in 1791, it became the Medical Department of the University its present relation The faculty is made up of 27 professors 2 associate professors 4 adjunct professors 7 assistant professors 112 demonstrators lecturers associates instructors, etc , a total of 152 Clinical material is furnished by the University Hospital capacity 300 beds which treats over 14 000 cases annually University Maternity Pavilion with 50 beds Philadelphia Hospital, containing 1 000 beds Pennsylvania Hospital Children s Hospital and the Southeastern Hospital and Dispensary The requirements for admission will be increased beginning with the session of 1908 9 to the equivalent of one year s work in a college of arts The course embraces study for four years of nine months each The total fees for each year are $200 with a matriculation fee of $5 for the first year The Dean is Dr Charles H Frazier Total enrolment for 1906-7 was 588 graduates 114 The next session opens Sept. 27 1907 and closes June 17 1908

Jefferson Medical College of Philadelphia.—This school was organized in 1825 and has a faculty of 30 professors and 94 lecturers, demonstrators etc a total of 124 Jefferson Hospital together with its maternity department, are used exclusively by students of the school for clinical study A new fireproof hospital having 300 beds with provision for a large dispensary is now in use. The following hospitals are also open for study of clinical cases Pennsylvania Philadelphia, St Joseph s German, Municipal and Wills Eye hospitals The course of study covers graded work of four years of eight months each The tuition is $180 a year with a matriculation fee of $5 paid but once The Dean is Dr James W Holland The total number of students for 1906-7 was 620 graduates 126 The next session opens Sept 24, 1906 and closes June 8 1908

Medico Chirurgical College of Philadelphia.—This school was organized in 1881 and has a faculty made up of 29 professors and 59 assistants lecturers etc. 88 in all Opportunities for clinical study are offered by the Medico-Chirurgical Hospital with 125 beds and its children s and maternity hospital having 30 beds In common with other schools the following are used *Philadelphia* Pennsylvania German Samaritan St Joseph s St Agnes St. Mary s Methodist Jewish and the Philadelphia Lying in hospitals The work embraces four years of eight months each Fees $150 per annum matriculation, $5 payable once The Dean is Dr Seneca Egbert. Total enrolment 1906-7 was 434 graduates 75 The next session opens Sept. 23 1907, and will close June 6, 1908

Woman's Medical College of Philadelphia.—This school was organized in 1850 and has a faculty of 10 professors and 37 assistants, lecturers etc., in all 47 Clinical facilities are offered by the Hospital of the Woman s Medical College of Pennsylvania, Woman s Hospital West Philadelphia Hospital for Women German Jewish Children s and *Philadelphia* hospitals Presbyterian Hospital Wills Hospital for Diseases of the Eye the Howard Hospital and the Philadelphia Lying in Charity The curriculum covers four years of eight months each Fees $140 each year The Dean is Dr Clara Marshall Total enrolment for 1906 7 was 152 graduates 29 The next session begins Sept. 25 1907, and will end May 20 1908.

Hahnemann Medical College and Hospital —Homeopathic. This was organized in 1848 and has a faculty of 27 professors and 51 lecturers instructors etc , in all 78 Hahnemann College Hospital furnishes material for clinical work. The work covers four years of eight months each Fees For each year $150 matriculation $5 Total number of students for 1906 7 was 188 graduates 48 The Dean is Dr Herbert L Northrop The sixtieth session begins Sept 25 1907 and will end May 24 1908

Medical Department of the Temple College —This school was organized in 1901 It has a faculty of 10 professors and 40 instructors and assistants a *total of 50* Beginning in September 1907 there will be a four year day course and a five-year evening and day course Three years of evening work will be required to cover the work of the two first years of the day course All junior and senior work must be done in day classes The fees are $150 per year The total *enrolment* for 1906-7 was 90 graduates 16. The Dean is Dr I Newton Snively The next session begins Sept. 10, 1907 and ends June 16 1908

Pittsburg

Western Pennsylvania Medical College —This is the Medical Department of the Western University of Pennsylvania and was organized in 1886 The faculty is composed of 47 professors and 57 associates assistants etc. 104 in all Clinical material for study is furnished by a college dispensary and the Emma Kaufman Clinic, Reineman Maternity Hospital Mercy South Side Passavant and St. John s hospitals The course of study embraces four years of nine months each The total fees are $150 for each year The Dean is Dr J C Lange Total enrolment for 1906-7 was 346 graduates 48 The next session begins Oct 1 1907 and will close June 12, 1908

PHILIPPINE ISLANDS

Manila.

University of Saint Thomas Medical Department —The University was founded by a papal decree in 1587 and the medical school was added in 1871 The faculty consists of 19 professors The course extends over a period of six years of nine months each The first year is a preparatory one devoted to the teaching of physics chemistry and biology The degree of licenciado is conferred at the conclusion of the fifth year and the degree of doctorado at the end of the sixth year during which only special work is done. This last year is optional the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner The degree is equivalent to the English M.B The Rector of the university is Dr Fr Raymundo Velasquez the Secretary of the Medical Department is Lic. Blas C Alcuaz

Philippine Medical College.—This school has just been organized under the support of the Philippine Commission which appropriated $62,500 for the first session which begins this fall The requirement for admission will conform to the standards in the United States and Great Britain The Secretary is Dr Harry T Marshall

SOUTH CAROLINA

South Carolina, population 1,434,901, has one medical college, situated in Charleston, a city of 56 062 people Board and room can be obtained for from $12 to $16 a month

Charleston

The Medical College of the State of South Carolina —This school was founded in 1823 The faculty is made up of 10 professors and 12 assistants etc 22 in all Clinical facilities are offered by the New Roper Hospital capacity 150 beds The course covers four years of seven months each The total fees for each of the first two years are $100 and $75 each for the last two The Dean is Dr Edward F Parker Total enrolment for 1906 7 was 130 graduates 21 The next session opens Oct. 1, 1907 and closes May 1 1908

TENNESSEE

Tennessee, population 2,147,166 has eleven medical colleges Of these Vanderbilt University Medical Department, the Medical Department of the University of Nashville, University of Tennessee Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 80,865 Board and lodging cost from $3 to $4 a week Knoxville, population 34,344, contains two colleges, Tennessee Medical College and Knoxville Medical College The cost of room and board in that city is from $2 50 to $4 a week Chattanooga Medical College is situated in Chattanooga, a city of 30 469 people Board and lodging cost there from $2 a week upward Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 113,669, where good board can be obtained for from $3 to $4 a week The other school, the Sewanee Medical College, is located at Sewanee, a town of 500

Chattanooga.

Chattanooga Medical College —This is the Medical Department of Grant University and was organized in 1889 The faculty consists of 10 professors and 16 instructors, demonstrators etc total 26 Clinical facilities are afforded by Baroness Erlanger Hospital a county asylum and a dispensary This school is a member of the Southern Medical College Association The course covers four years of seven months each The total fees approximate $55 each session The Dean is Dr J R Rathmell The enrolment for 1906 7 was 249 *graduates* 36 The next session opens about Oct. 1, 1906, and ends April 30, 1907

Knoxville

Tennessee Medical College —This school was organized in 1889 and is now the Medical Department of the Lincoln Memorial University It has a faculty of 14 professors and 12 assistants a total of 26 The Lincoln Memorial Hospital owned and controlled by the faculty furnishes material for clinical study This school is a member of the Southern Medical College Association The curriculum covers four years of seven months each Fees First and second years $50 third and fourth years, $60 matriculation fee $5 graduation fee $25 The Registrar is Dr F R Zemp Total *number* of students for 1906 7 was 80 graduates 16 Next session begins Nov 1, 1907 and closes about June 1 1908

Knoxville Medical College —Colored This school was established in 1900 The teaching force comprises 13 The course covers four years of seven months each Fees $40 per year The Secretary is Dr H M Green Total number of students for 1906 7 was 32 graduate 1 The next session opens Nov 4, 1907, and closes June 6, 1908

Memphis

Memphis Hospital Medical College —This school organized in 1878 has a faculty of 11 professors and 26 assistants besides quiz masters Clinical facilities are furnished by the City Hospital Presbyterian Hospital St Joseph s Hospital and the East End Dispensary This school is a member of the Southern Medical College Association The course covers four years of seven months each The total fees for the first three years are $75 for the fourth $100 The Dean is Dr W R Rogers Total registration for 1906-7 was 388 graduates 66 The twenty eighth annual session will begin Oct 1 1907 and close April 30 1908

College of Physicians and Surgeons —This college was organized in 1906 and has a faculty of 20 The Memphis City Hospital furnishes clinical material Access will also be had to St. Joseph s Presbyterian and Lucy Brinkley hospitals The course covers four years of seven months each The enrolment for 1906-7 was 64 graduates 22 The Dean is Dr Heber Jones Tennessee Trust Building The next session begins Oct. 1, 1907, and ends April 1 1908

Medical Department of the University of West Tennessee —Colored. This *school* organized in 1900 has a faculty of 10 The course is four years of seven months each Clinical facilities are furnished by the Houston Hospital and a dispensary The fees are $40 per year graduation $10 extra Registration for 1906 7 was 23 graduates 3 The President is Dr M V Lynk The next session opens Sept 16 1907 and closes April 18 1908

Nashville

Vanderbilt University Medical Department —This school was founded in 1874 and in 1895 when the present medical building was completed, the course was extended, the standard raised.

The present faculty of 35 consists of 20 professors and 15 lecturers The school is a member of the Association of American Medical Colleges The course covers four years of seven and a half months each The minimum entrance requirement is a high school diploma or its equivalent The total fees are $125 each year The Dean is Dr William L Dudley Total enrolment for 1906 7 was 215 graduates 42 The next session begins on or about Sept 18 1907, and ends May 1, 1908

University of Nashville Medical Department—This school established in 1850 has a faculty of 10 professors and 15 lecturers assistants etc in all 25 This school is a member of the Southern Medical College Association The course of study covers four years of seven and a half months each The tuition for each *of the four years is $75 The Dean is Dr William G Ewing* Total enrolment for 1906 7 was 414 graduates 86 The next session begins Oct. 1, 1907, and ends April 30, 1908

University of Tennessee Medical Department—This school was organized in 1876 as the Nashville Medical College its present relations were assumed in 1879 The faculty is composed of 13 professors and 18 lecturers assistants etc 31 in all The school is a member of the Southern Medical College Association The course covers four years of seven months each The total fees for each of the first three years are $100 and $125 for the fourth year The Dean is Dr Paul F Eve 614 Broad St Total enrolment for 1906 7 was 167 students graduates 41 The next session begins Sept 16 1907, and ends May 1, 1908

Meharry Medical College—Colored This school was organized in 1876 as the Medical Department of Central Tennessee College now Walden University This school is a member of the Association of American Medical Colleges The faculty is made up of 12 professors and 13 instructors demonstrators, etc. 25 in all The work embraces four years of seven months each The total fees are for the first year, $52 second and third years $55 each and $60 for the fourth year The Dean is Dr G W Hubbard Total registration for 1906 7 was 300 graduates 73 The next session begins Sept 4, 1907, and ends April 3 1908

Sewanee

Medical Department of the University of the South—This school was organized in 1892 and has a faculty of 21 members It is a member of the Southern Medical College Association The curriculum covers four years of seven months each The Dean is Dr J S Cain Total enrolment for 1906-7 was 150, graduates, 39 The fifteenth course opened April 1, 1906 7, and closes Nov 1 1907

TEXAS

Texas, population 3,455,300, has seven medical colleges The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants Good board and room can be procured for from $15 to $20 a month The Medical Department of Fort Worth University is at Fort Worth, population of 27,192 The cost of board and room in that city is from $12 to $15 a month The Baylor University College of Medicine, the Medical Department of Southwestern University, the College of Physicians and Surgeons and the Physio Medical College of Texas are situated in Dallas, population 44 159 The Gate City Medical College is situated in Texarkana, having a population of 5,256

Dallas

Baylor University College of Medicine—This is a new name for the University of Dallas Medical Department, which was organized in 1907 In June, 1903, it became the Medical Department of Baylor University at Waco In 1905 it merged with the Dallas Medical College *The faculty numbers 20 professors* and 16 assistants, total 36 Parland Hospital, with 90 beds, St. Paul's Sanitarium Baptist Memorial Hospital and a college dispensary and hospital furnish clinical material The course covers four years of seven months each The school is a member of the Southern Medical College Association *The fees* are $75 for each of the four years with a matriculation fee of $5, paid once, and a graduation fee of $25 The Dean is Dr E H Cary Total registration for 1906 7 was 57, graduates, 6 The seventh session opens Oct. 1, 1907, and ends May 1, 1908

Southwestern University Medical College—*This is the* Medical Department of Southwestern University and was organized in June, 1903 *It has a faculty* of 15 professors and 15 instructors, total 30 The course of instruction covers four years This school is a member of the Southern Medical College Association The fees are Matriculation, $5 paid once, annual tuition, $75 graduation, $25 The hospitals open *for* clinical teaching are St. Paul's Sanitarium City Hospital Texas Baptist Memorial Hospital, Children's Home Mission Home, Woman's Home, St Joseph Orphanage, St Matthew's Home for Children, Dr H K. Leake's Private Infirmary and Outdoor Clinic of the Settlement Home The Dean is Dr John O McReynolds Total registration, 1906 7, was 68 *graduates* 9 The fifth session opens Oct. 2, 1907, and closes May 1, 1908

College of Physicians and Surgeons—This school was founded in 1904 as the Bell Medical College and in 1905 the name was changed to the above It has a total teaching staff of 15 The course extends over four years *of* six months each The fees for the first three years are $80, and $105 for the fourth year The Dean is Dr Arthur C Bell Total registration for 1906 7 was 103, graduates, 23 The next session begins Oct 2 1907, and closes April 25, 1908

Physio-Medical College of Texas—This college was organized in 1902 It has a faculty of 21 professors and 4 assistants total 25 The course is *four years of* thirty weeks each The fees are, first year, $70 fourth year, $85 other years, $65 Enrolment, 1906-7, was 44 graduates 2 The Secretary is Dr R L Spann The next session opens Oct. 8, 1907, and closes May 16, 1908

Fort Worth

Medical Department of Fort Worth University—This school was organized in 1894 and has a faculty of 15 professors and 22 lecturers assistants, etc in all 37 Clinical facilities are supplied by St Joseph's Hospital, with 200 beds the Benevolent Home containing 75 beds, the Della Collins Rescue Home, having 50 beds and a college dispensary The school is a member of the Southern Medical College Association The course covers four years *of seven months* each The total fees for each of the first three years are $75 and $100 for the fourth year The Dean is Dr Frank Gray The total enrolment for 1906 7 was 176 graduates 19 The next session opens Oct 3, 1907, and closes May 3, 1908

Galveston

University of Texas Medical Department—This department of the State University was organized in 1891 and has a faculty of 22 The John Sealy Hospital and St Mary's Infirmary supply material for clinical study Requirements for admission Graduates of approved schools and colleges graduates of affiliated high schools holders of first grade state teachers certificates and students of approved colleges and universities are admitted without entrance examination Others must pass examinations on the following prescribed subjects English 3½ units history 1½ units algebra 1½ units 1½ units in either geometry Latin or physics and 5 additional units from elective subjects, or 6 units if Latin be included (A unit is a high school course pursued for one session) The curriculum embraces four years of eight months each Fees First year $50 second and third each $20 and $5 for the fourth The Dean is Dr William S Carter Total registration for 1906 7 was 188 graduates 27 The seventeenth session begins Oct 1, 1907, and ends May 30, 1908

Texarkana

Gate City Medical College.—Organized in 1904 The length of each course is seven months The Faculty numbers 20 professors and assistants Registration 1906-7 was 209 graduates, 54 The Dean is Dr J W Decker The next session begins Oct. 1 1907, and ends May 4 1908

UTAH

Utah, population 309 734 has one medical college, situated at Salt Lake City, which has 57 138 *people This college is the* Medical Department of the University of Utah, which gives only the first two years of the medical course

Salt Lake City

University of Utah Department of Medicine—The department was organized in 1906 and offers the first two years of the medical course each year extending over thirty six weeks The *medical faculty consists of 7 professors* and 16 lecturers and assistants a total of 23 Fees First year total $62 50 second year $68 75 The Dean is Ralph V Chamberlain Ph D The enrolment for 1906 7 was 46 The third session begins Sept 12, 1907, and ends June 8, 1908

VERMONT

Vermont, population 349,251 has one medical school, located at Burlington, a town of 19,885 people Board and room cost from $3 50 to $5 a week

Burlington

University of Vermont College of Medicine—This school was organized in 1822 but suspended from 1836 until 1854 when it was reorganized The faculty consists of 31 professors and 15 assistants instructors etc in all 46 The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction The course of study covers four years of seven months each The total fees for each of the first three years are $115 and $140 for the fourth year The Dean is Dr H C Tinkham Secretary H L White A M Total registration of students for 1906-7 was 165 graduates 34 The fifty fifth session begins Nov 14, 1906, and ends *June 24, 1908*

VIRGINIA

Virginia, population 1,953 284, has three medical colleges, one, the Medical Department of the University of Virginia, situated in Charlottesville population 6,449, and two the Medical College of Virginia and the University College of Medicine, in Richmond population 86,148 Board and room can be obtained for $18 a month and upward in Charlottesville, and from $12 to $20 a month in Richmond

Charlottesville

University of Virginia Department of Medicine—This school was organized in 1827 and has a faculty of 25 The course is *four years of* nine months each The requirements *for* admission are the completion of a three years high school course or its equivalent and a year of chemistry physics and biology A free dispensary and a new hospital with a capacity of 110 *beds furnish* the clinical facilities Fees First year, $150 second year $140 third year $120 fourth year *$100 The Dean is Dr R* H Whitehead Total enrolment for 1906 7 was 134 graduates 31 *The* next session opens Sept 12, 1907, and closes June 12, 1908

Richmond.

Medical College of Virginia—This school was organized in *1838 as* the Medical Department of Hampden Sidney College Virginia In 1858 it took its present name In 1860 the college became a state institution Clinical material is furnished by the Memorial Hospital and the City Free Dispensary The State Penitentiary Hospital and other public charities and asylums of the city afford additional clinical material This school is a member of the Southern Medical College Association The course embraces four years of eight months each Fees $100 each year graduation fee $30 The Dean is Dr Christopher Tompkins Total registration for 1906-7 was 212 graduates 20 The next session begins Sept 24 1907 and ends May 20 1908

University College of Medicine.—This school was organized in 1893 and has a faculty of 19 professors 43 lecturers assistants etc a total of 62 Clinical facilities are furnished by Virginia Hospital Richmond Eye Ear and Throat Infirmary containing 24 beds the City Hospital City Jail State Penitentiary and a college dispensary This school is a member of the Association of American Medical Colleges The curriculum covers four years of eight months each The total fees are $100 for each year The President is Dr Stuart McGuire the Dean is Dr Paulus A Irving Total enrolment for 1906-7 was 182 graduates 43 The next session begins Sept. 18 1907 and ends May 19 1908

WEST VIRGINIA.

West Virginia, population 1 056 805, has one medical college College of Medicine of the West Virginia University, located at Morgantown, a city of 1 000 inhabitants

Morgantown

West Virginia University College of Medicine—This school was organized in 1902 and gives only the first two years of the medical course Each college term extends over nine months The faculty consists of 6 professors and 5 assistants 11 in all The school is a member of the Association of American Medical Colleges Tuition to students residing in the state $25 for others $50 per year The Dean is Dr J N Simpson Total registration in 1906-7 was 45 The next session begins Sept 16 1907 and closes June 18, 1908

WISCONSIN

Wisconsin population 2,069 042, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course and is located at Madison a city having a population of 20 886 and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 312,736 people Clinical facilities are furnished them in common by the County Hospital, with 300 beds and the Milwaukee Hospital for the Insane Board and lodging can be had for from $3 to $5 a week

Madison.

University of Wisconsin, College of Medicine—This department of the University of Wisconsin was authorized at the recent session of the State Legislature The work will be limited to the first two years of the medical course For matriculation a candidate must have had in addition to a four year high school course at least two years in a college of arts and science or an equivalent training. Two years of Latin a reading knowledge of French and German and at least a year's work in physics chemistry and biology are specifically required. The college will be open for the matriculation of students Sept. 25 26 1907 The college year runs to June 8 1908 For further information address the Registrar University of Wisconsin

Milwaukee.

Milwaukee Medical College Medical Department of Marquette University—*This* school was organized in 1893 and has a faculty of 36 *professors* and 29 lecturers instructors etc a total of 65 Clinical material is furnished by Trinity and the County Hospitals Milwaukee Hospital for the Insane and a college dispensary The school is a member of the Association of American Medical Colleges The course covers four years of eight months each The total fees are $125 each for the first three years and $135 for the fourth year The Dean is Dr William H Earles. Total number of students for 1906-7 was 130 graduates 27 The fourteenth session begins Sept. 17 1907, and closes May 20 1908

Wisconsin College of Physicians and Surgeons—This college was organized in 1893 and has a faculty composed of 20 professors and 26 associates assistants, etc a total of 46 St Joseph's Hospital containing 150 beds the college dispensary the Milwaukee County Hospital and the Hospital for the Insane supply clinical material The school is a member of the Association of American Medical Colleges The curriculum includes four years of eight months each Fees Matriculation paid once $5 general ticket $100 for the use of the microscope a fee of $2 is charged for each course The Secretary is Dr W H Washburn Total enrolment for 1906-7 was 62 graduates 21 The next session begins Sept 24 1907 and ends May 27 1908

THE AMERICAN MEDICAL ASSOCIATION STANDARD OF MEDICAL EDUCATION

THE IDEAL STANDARD

The ideal standard to be aimed at from the present viewpoint should consist of (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed on by the state authorities (B) A five year medical course, the first year of which should be devoted to physics chemistry and biology, and such arrangements should be made that this year could be taken either in a school of liberal arts or in the medical school Of the four years in pure medical work, the first two should be spent in laboratories of anatomy, physiology, pathology, pharmacology, etc and the last two *in close contact with patients in* dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties (C) A sixth year as an interne in a hospital or dispensary should then complete the medical course

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25 A college education is recognized as a desirable preparation for a limited number of men but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years which is regarded as too old a period at which the young medical man should begin his life's work It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended

STANDARD NOW RECOMMENDED

The minimum standard now recommended prerequisite to the practice of medicine is as follows

1 (a) The preliminary requirement to be a four year high school education or its equivalent such as would admit the student to one of our recognized universities, (b) and in addition (as soon as conditions warrant) a year of not less than nine months, devoted to the study of physics, chemistry, biology and one modern language preferably German, to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned

2 There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate" which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education

3 A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work

4 Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board

5 The passing of a satisfactory examination before a state examining board

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THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership in force until April 10, 1905, were as follows

Section 1—Each college holding membership in this Association shall require of each student *before* admission to its course of study an examination, the minimum of which shall be as follows

1 In English a composition on some subject of general interest. This composition must be written by the student at the time of the examination and should contain at least 200 words It should be criticised in relation to thought, construction, punctuation spelling and handwriting

2. In Arithmetic, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion

3 In Algebra such questions as will bring out the student's knowledge of the *fundamental* operations, factoring and simple quadratic equations

4 In Physics such questions as will discover the student's understanding of the elements of mechanics, hydrostatics hydraulics optics and acoustics

5 In Latin an examination on such elementary work as the student may offer showing a familiarity usually attained by one year of study for example the reading of the first 15 chapters of Cæsar's Commentaries and the translation into Latin of easy English sentences involving the same vocabulary

Sec 2—In place of this examination or any part of it colleges members of this Association are at liberty to recognize the official certificates of reputable literary and scientific colleges academies high schools and normal schools and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination

Sec 3—Colleges members of this Association may allow students who *fail* in one or more branches in this entrance examination the privilege of entering the first year course but such students shall not be allowed to begin the second course until the entrance requirements are satisfied

Sec 4—Colleges members of this Association are free to honor official credentials issued by medical colleges of equal requirements except in the branches of study embraced in the last year of their own curriculum

(*Continued on page 592*)

NAME AND LOCATION OF COLLEGE	Population of city in which college is located (Census Bureau est 1903)	Number of students registered, session of 1906-7		Graduates 1907		Total number of teachers	Weeks in college year	Total students in all colleges in state, 1906-7	Total graduates all colleges in state, 1907
		Men	Women	Men	Women				
ALABAMA								283	40
Birmingham Medical College, Birmingham—R	42 037	113		12		34	24		
Medical College of Alabama, Mobile —R	40 636	170		28		23	28		
ARKANSAS								269	37
Arkansas University, Little Rock —R	42 036	180	2	25	1	43	28		
College of Physicians and Surgeons —R	42,036	87		11		39	28		
CALIFORNIA								416	102
Cooper Med Coll San Francisco —R	355 919	103	9	24	5	61	36		
University of California San Francisco —R	355 919	46	8	20	4	58	36		
Hahnemann Medical College San Francisco —H	355,919	23	5	2	0	32	32		
College of P and S San Francisco —R	355 919	70	9	15	1	40	32		
Oakland Coll of Med and Surg, Oakland —R	70 386	8	2	1	1	30	36		
University of Southern California, Los Angeles —R	116 420	84	15	21	6	55	33		
College of P and S, Los Angeles —R	116,420	29	5	2	0	39	36		
COLORADO								201	47
Denver and Gross Coll of Med, Denver —R	144 588	93	8	26	3	70	33		
Westminster University College of Medicine —P	144 588	29	13	5	1	37	29		
Colorado School of Medicine, Boulder —R	6 150	58		12		37	35		
CONNECTICUT								153	29
Yale University Medical Department, New Haven —R	114,600	153		29		56	36		
DISTRICT OF COLUMBIA								483	119
George Washington University Washington —R	293 217	215		63		81	33		
Georgetown University, Washington —R	293 217	82		12		54	33		
Howard University Medical Department, Washington —R	293 217	178	8	40	4	35	32		
GEORGIA								619	90
Atlanta College of P and S, Atlanta —R	96 550	200		37		41	28		
Atlanta School of Medicine Atlanta —R	96 550	233		20		35	29		
Georgia Coll of Eclectic Med and Surg, Atlanta —E	96 550	76		12					
International Medical Missionary College —R	96 550	12		1		10			
University of Georgia, Augusta —R	41 283	98		20		30	28		
ILLINOIS								2,996	608
American Medical Missionary College, Chicago —R	1,873,880	28	18	4	6	28	35		
Bennett Coll of Eclectic Med and Surg, Chicago —E	1,873,880	133	20	30	4	51	31		
College of Medicine and Surgery Chicago —Ph M	1,873,880	16	12	1	1	37	30		
College of Physicians and Surgeons Chicago —R	1,873 880	463	38	136	10	155	33		
Hahnemann Medical College, Chicago —H	1,873 880	118	18	31	11	86	31		
Hering Medical College, Chicago —H	1,873,880	72	8	9	2	52	32		
Illinois Medical College, Chicago —R	1,873 880	203	4	38	2	50	30		
Jenner Medical College, Chicago —R*	1,873,880	177	8	17	2	53	33		
Northwestern University Chicago —R	1,873 880	473		134		121	34		
Rush Medical College Chicago —R	1,873 880	533	34	82	1	238	34		
National Medical University, Chicago —P	1,873,880	230	20	24	2	35	36		
Chicago College of Medicine and Surgery Chicago —R	1,873 880	225	14	33	2	74	32		
Dearborn Medical College, Chicago —R*	1,873,880	119	7	23	3	45	30		
INDIANA								373	105
Indiana Medical College Indianapolis —R	191,033	221	6	66	4	111	34		
Physio Med Coll of Indiana, Indianapolis —Ph M	191 033	23	2	7		47	32		
Eclectic Med Coll of Indiana, Indianapolis —E	191,033	12		3			28		
Indiana Univ Sch of Med and the State Coll of P & S —R	191 033	105	4	25	0	45	33		
IOWA								548	113
Drake University College of Medicine Des Moines —R	65,754	67	9	16	1	51	35		
Keokuk Medical College of Phys and Surg, Keokuk—R	14,803	120	7	27	3	25	31		
Sioux City College of Medicine, Sioux City —R	31,701	25	4	9	1	26	34		
State University of Iowa Homeo Dept, Iowa City —H	7 987	44	0	4	0	10	34		
State University of Iowa, Medical Dept, Iowa City —R	7,987	257	15	47	5	27	34		
KANSAS								238	52
Kansas Medical College Topeka —R	35 388	79	8	13	1	42	31		
School of Medicine Univ of Kansas Kansas City —R	55 348	112	3	29		70	35		
Eclectic Medical University, Kansas City—E	55,348	32	4	7	2	49	28		
KENTUCKY								1,223	335
Hospital College of Medicine, Louisville —R	215 945	256		91		51	28		
Kentucky School of Medicine Louisville —R	215 945	270		66		47	28		
Louisville Medical College Louisville —R	215 945	180		53		30	30		
Louisville National Medical College Louisville —R	215 945	48	2	12	1	24	30		
Southwestern Homeopathic Med Coll Louisville —H	215 945	11		1		27	28		
University of Louisville, Louisville —R	215 945	456		158		84	30		
LOUISIANA								567	100
Flint Medical College New Orleans —R	300 625	50	1	8	1	16	32		
Tulane University New Orleans —R	300,625	516		91		61	28		
MAINE								94	16
Medical School of Maine, Portland —R	52 656	94		16		34	32		
MARYLAND								1 562	355
Baltimore Medical College, Baltimore —R	513 313	481		97		67	32		
Baltimore University School of Medicine, Baltimore —R	513 313	23		5		24	34		
College of Phys and Surg, Baltimore —R	513 313	302		75		51	32		
Johns Hopkins University Baltimore —R	513 313	252	12	66	4	95	33		
Atlantic Medical College, Baltimore —H	513 313	17	5	9	2	37	32		
University of Maryland, Baltimore —R	513,313	311		62		63	32		
Woman's Medical College, Baltimore —R	513 313		34		6	34	32		
Maryland Medical College, Baltimore —R	513,313	125		29		41	32		
MASSACHUSETTS								961	160
Boston University School of Medicine Boston —H	594,018	68	28	8	5	52	32		
College of Physicians and Surgeons Boston —R	594,618	112	11	24	2	45	35		
Harvard University Medical School, Boston —R	594 618	366		61		147	36		
Tufts Medical College, Boston —R	594 618	342	34	46	11	95	32		
MICHIGAN								656	154
Detroit College of Medicine Detroit —R	309 653	158		68		93	33		
Detroit Homeopathic Medical College Detroit —H	309 653	20	9	6	3	36	28		
Michigan College of Medicine and Surgery Detroit —R	309,653	6		0		36	34		
Grand Rapids Medical College, Grand Rapids —R	91 630	10		10					
University of Michigan, Dept of Medicine Ann Arbor —R	16 073	349	22	47	5	66	35		
University of Michigan, Homeopathic Dept Ann Arbor —H	16 033	73	9	12	3	35	35		
MINNESOTA								311	61
University of Minnesota Homeo Dept, Minneapolis —H	214 112	14		6		62	35		
University of Minnesota Dept of Med Minneapolis —R	214 112	180	8	26	1	90	35		
Hamline University Minneapolis —R	214 112	105	4	16		45	35		
MISSISSIPPI								124	22
University of Mississippi Oxford —R	2 000	18				8	35		
Mississippi Medical College, Meridian —R	15 079	101	2	22		20	25		

* Evening Colleges R, Regular H, Homeopathic E Eclectic, Ph-M, Physio-Medical P, Panpathic

NAME AND LOCATION OF COLLEGE	Population of city in which college is located (Census Bureau est 1903)	Number of students registered of session 1906-7		Graduates 1907		Total number of teachers	Weeks in college year	Total students in all colleges in state 1906-7	Total graduates all colleges in state 1907
		Men	Women	Men	Women				
MISSOURI								1 632	645
University Medical College Kansas City —R	173 061	243		57		60	31		
Kansas City Hahnemann Med Coll Kansas City —H	173 641	71	3	11		41	30		
Ensworth Central Med Coll St Joseph —R	110 479	117		21		78	32		
Barnes Medical College St Louis —R	612 279	126	26	75	4	69	32		
St Louis University St Louis —R	612 279	238		56		105	31		
St Louis College of Phys and Surg St Louis —R	612 279	240		41		77	29		
American Medical College St Louis —L	612 279	31	4	7	2	17	29		
Homeopathic Med Coll of Missouri St Louis —H	612 279	30	5	9	2	24	33		
Washington University St Louis —R	612,279	214	1	50	0	111	32		
University of Missouri Columbia —R	5 651	61	5	2	0	25	31		
NEBRASKA								326	70
University of Nebraska Omaha —R	113 301	77	6	15	1	75	35		
Creighton Medical College Omaha —R	113 301	163	4	35	0	57	32		
Lincoln Medical College Lincoln —E	44 243	48	2	11	1	26	32		
Nebraska College of Medicine Lincoln —R	44 243	25	2	6	1	39	33		
NEW HAMPSHIRE								62	11
Dartmouth Medical College Hanover —R	1,854	62		11		21	30		
NEW YORK								2 375	430
Albany Medical College Albany —R	93 920	195		40		85	30		
College of Physicians and Surgeons New York —R	3 716 139	337		93		150	34		
Cornell University New York —R	3 716 139	318	24	62	10	173	31		
Eclectic Medical College New York —E	3 716 139	16	17	11	0	41	30		
Long Island College Hospital New York —R	3 716 139	342		87		144	31		
New York Homeo Med College New York —H	3 716 139	100		22		73	30		
New York Woman's Medical College New York —H	3 716 139		24		4	47	30		
University and Bellevue Medical College New York —R	3 716 139	502		63		103	32		
Fordham University School of Medicine New York —R	3 716 139	24				23	34		
Syracuse University Syracuse —R	114 443	147	6	21	0	56	33		
University of Buffalo Buffalo —R	381 403	203	11	55	4	73	31		
NORTH CAROLINA								371	43
Leonard Medical School Raleigh —R	13 934	149		24		10	29		
University of North Carolina Raleigh —R	13 934	114		10		36	32		
North Carolina Medical College Charlotte —R	20 050	69		14		32	28		
Wake Forest School of Medicine Wake Forest —R	823	39				10	35		
NORTH DAKOTA								15	
University of North Dakota University —R		15				22	35		
OHIO								704	167
Western Reserve University, Cleveland —R	414 950	87		10		91	34		
Cleveland Coll of Phys and Surg Cleveland —R	414 950	86	6	13	0	66	32		
Cleveland Homeopathic Med Coll Cleveland —H	414 950	37	6	9	1	56	30		
Eclectic Medical Institute, Cincinnati —E	332 934	92	5	25	3	29	30		
Medical College of Ohio Cincinnati —R	332 934	129	4	31	1	89	32		
Pulte Medical College Cincinnati —H	332 934	11	4	4	1	31	31		
Miami Medical College Cincinnati —R	332 934	78	2	10	0	50	32		
Ohio Medical University Columbus —R	135 487	123	4	21	0	42	32		
Starling Medical College Columbus —R	135 487	19	1	17	1	53	32		
Toledo Medical College Toledo —R	145 901	18	2	8	0	32	31		
OKLAHOMA								29	1
University of Oklahoma Norman —R	3 632	13				10	36		
Epworth University Med Dept Oklahoma City —R	12 500	14	2	1		25	29		
OREGON								131	36
University of Oregon Portland —R	93 655	76	10	17	3	39	30		
Willamette University Salem —R	4 253	43	2	15	1	19	30		
PENNSYLVANIA								2 427	453
Temple College of Medicine Philadelphia —R *	1 367 716	90		16		59	36		
University of Pennsylvania Philadelphia —R	1 367 716	533		114		152	34		
Hahnemann Medical College Philadelphia —H	1 367 716	183		43		73	32		
Jefferson Medical College Philadelphia —R	1 367 716	609		196		124	34		
Woman's Medical College Philadelphia —R	1 367 716		152		29	47	31		
Medico-Chirurgical College Philadelphia —R	1 367 716	434		75		88	34		
Western Pennsylvania Medical College Pittsburg —R	345 043	337	9	47	1	110	34		
SOUTH CAROLINA								130	21
Medical College of South Carolina Charleston —R	56 062	120	1	20	1	22	23		
TENNESSEE								2 032	425
Tennessee Medical College Knoxville —R	34 344	78	2	16	0	20	23		
Knoxville Medical College Knoxville —R	34 344	22	10	1	0	13	28		
University of Nashville Nashville —R	80 711	414		86		23	30		
Vanderbilt University Nashville —R	80 711	216		42		35	30		
University of Tennessee Nashville —R	80 711	167		41		31	30		
Meharry Medical College Nashville —R	80 711	285	15	60	4	24	23		
Memphis Hospital Medical College Memphis —R	113 669	383		63		37	28		
College of Physicians and Surgeons Memphis —R	113 669	64		22		45	28		
University of West Tennessee Memphis —R	113 669	23		3		29	23		
University of the South Sewanee —R	440	150		39		22	28		
Chattanooga Medical College Chattanooga —R	30 469	240		26		20	23		
TEXAS								834	110
Fort Worth University Fort Worth —R	27 102	173	3	19	0	37	28		
University of Texas Galveston —R	31 742	181	7	27		22	32		
Baylor University Dallas —R	44 159	56	1	5	1	38	28		
Physio-Med Coll of Texas Dallas —Ph M	44 159	38	6	2		25	29		
Southwestern University Medical College Dallas —R	44 159	67	1	9	0	30	28		
College of Physicians and Surgeons Dallas —R	44 159	103		23		15	28		
Gate City Medical College Texarkana —R	5 253	105	3	53	1	21	28		
UTAH								46	
University of Utah Dept of Med Salt Lake City —R	57 138	46				11	35		
VERMONT								165	34
University of Vermont Burlington —R	19 855	165		34		46	30		
VIRGINIA								523	103
Medical College of Virginia Richmond —R	86 148	212		29		43	32		
University College of Medicine Richmond —R	86 148	182		43		62	32		
University of Virginia Charlottesville —R	6 449	134		31		26	36		
WEST VIRGINIA								45	
University of West Virginia Morgantown —R	1 895	45				11	36		
WISCONSIN								192	43
Milwaukee Medical College Milwaukee —R	312 730	193	7	27		67	32		
Wisconsin College of Phys and Surg Milwaukee —R	312 730	61	1	20	1	46	32		

TABLE 2—SHOWING DISTRIBUTION

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Marginal Number
		678	10	510	375	225	176	51	120	120	505	31	2126	120	752	785	457	812	532	180	382	950	
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist Colum	Florida	Georgia	Idaho	Illinois	Indian Ter	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	
1	Birmingham Medical College —R	100								1	1								2				1
2	Medical College of Alabama —R	154																					2
3	Medical Dept Arkansas University —R			162									1	8	1				3				3
4	College of Physicians and Surgeons —R	2	1	63							2		1	3									4
5	Cooper Medical College —R	1			77					103						2	1			2		2	5
6	Medical Dept Univ of California —R				50																		6
7	Hahnemann Med C of the Pacific —H				28																		7
8	Coll of P and S San Francisco —R				29								3		2	2	1						8
9	Oakland Coll of Med and Surgery —R*				9						1												9
10	Coll of Med , Univ of So California —R		1		77								2		1	1	1						10
11	College of P and S , Los Angeles —R		1		6	2							2		2	2	1						11
12	Denver and Gross Coll of Med —R					45					1		9		4	3	4				2	2	12
13	Westminster Univ Coll of Med —P			2		1							3		2		3					2	13
14	Colorado School of Medicine				3	27						1	2		2	1	1			2		2	14
15	Yale University, Dept of Medicine —R					105							2			1						12	15
16	George Wash Univ , Dept of Med —R	1			3	1			45	2	1	1	13		5	8	1	4	6		12	5	16
17	Georgetown Univ , School of Med —R					1	4		16						1				1		1	8	17
18	Howard University, Medical Dept —R	2						3	32	3	8		6		2		1	1	4		5	3	18
19	Atlanta College of Phys and Surg —R	21								12	125							1	2				19
20	Atlanta School of Medicine —R	27		1						10	167								3				20
21	Georgia Coll of Eclectic M and S —E**	6								4	42			1									21
22	Medical College of Georgia —R									1	76												22
23	Internat Med Miss Coll , Atlanta —R										12												23
24	American Medical Missionary Coll —R				1		1						4		1	3							24
25	Bennett Coll of Eclectic M and S —E			2	1	1	1	1				2	72		10	6	1	2		1			25
26	Illinois Medical College —R	3		4	1	2							50	3	35	10		5	6		3		26
27	College of Medicine and Surgery —Ph M												24		1	1							27
28	College of Physicians and Surgeons —R	1			2	2			1				305	2	13	24	6	5	1			1	28
29	Hahnemann Med Coll and Hospital —H			3						1			48		12	16	6	1					29
30	Hering Medical College —H				1				1	1			46		8	3	4				1	1	30
31	Jenner Medical College —R												185										31
32	Northwestern University Med School —R	1			8	3					1	6	197		24	41	6	2	8				32
33	Rush Medical College —R	2	2	4	12	2	1			1		3	204	2	32	64	17	2	2	1		1	33
34	National Medical University —P																						34
35	Chicago Coll of Med and Surgery —R	1			3								94		20	8	2					8	35
36	Dearborn Medical College —R												106		1	1	1						36
37	Indiana Medical College —R												5		200								37
38	Physio Medical Coll of Indiana —Ph M												2		16								38
39	Eclectic Medical College of Indiana —E*														12								39
40	Indiana University School of Med —R												4		99								40
41	Drake University Coll of Medicine —R					3							1			59	4						41
42	Keokuk Med Coll of P and S —R			1								1	41		1	59	4						42
43	Sioux City College of Medicine —R															29							43
44	State Univ of Iowa, Hom M Dept —H											1	1			38	1						44
45	State Univ of Iowa Med Dept —R												9			240					1	1	45
46	Kansas Medical College —R					2	1										70	1					46
47	School of Medicine Univ of Kansas —R					1										1	93						47
48	Hospital College of Medicine —R *			3	1								8		24	1		166	6			1	48
49	Kentucky School of Medicine —R	2	1	5						3	4	2	5		24			123	6			2	49
50	Louisville Medical College —R	5		5						1	1		3	1	20	3	2	69	7			1	50
51	Louisville National Medical College —R	1								1	1			1	11		1	31					51
52	Southwestern Homeopathic Med Coll —H														5			6					52
53	Medical Dept Univ of Louisville —R	7		4	1		2			2	4		12	3	48	7	5	215	5	1	2		53
54	Flint Med Coll of New Orleans Univ —R	1		1							2								27				54
55	Tulane University, Medical Dept —R	53		12						9	10			1					235				55
56	Med School of Maine, Bowdoin Coll —R																			83		8	56
57	Baltimore Medical College —R	2			2		34	1	3	2	4					1		1	1	9	59	55	57
58	Baltimore Univ School of Medicine —R							1													16		58
59	College of P and S of Baltimore —R	3				1	17	1		1	1				1		1	1	1	4	41	20	59
60	Johns Hopkins Medical School —R	6		4	9	1	15	1	4	2	9		3		7	6	4	2		6	33	8	60
61	Atlantic Medical College —H						1	2												1	7		61
62	Woman's Med Coll of Baltimore —R						2								1				1	1	9	1	62
63	Univ of Maryland, School of Med —R						7	5	1	5	11				1		1	1	1	1	126	2	63
64	Maryland Medical College —R	1					4	5			2		1		1					8	38	3	64
65	Boston University School of Med —H						1		1											2		63	65
66	College of Physicians and Surgeons —R						3	3		1	1									1		92	66
67	Harvard University Medical School —R	2		1	10	4	1						1		1	2	1	2		17		226	67
68	Tufts College Medical School —R	1					4											1		15		301	68
69	Detroit College of Medicine —R											1			3			1					69
70	Detroit Homeopathic Med College —H*														1								70
71	Michigan College of Med and Surg —R																						71
72	Grand Rapids Medical College —R																						72
73	Univ of Michigan Dept of M and S —R	2			3	1	2			1		2	26		24	2		4				2	73
74	Univ of Mich , Homeo Med College —H						1						2		4								74
75	Coll of Hom M and S , U of Minn —H																						75
76	College of M and S , Univ of Minn —R												2		2	3		1					76
77	Medical Dept of Hamline Univ —R																						77
78	Med Dept , Univ of Miss Oxford —R																						78
79	Mississippi Med Coll , Meridian —R	6																	1				79
80	Medical Dept , Washington Univ —R	1		6		1						1	54	3	1	1	1	2			1		80
81	Univ Med Coll of Kansas City —R			2	2	1			2					5		2	81		1				81
82	Kansas City Hahnemann Med Coll —H				1								5		3	5	33	1					82
83	Nebraska College of Medicine —R															1	1						83
84	Eclectic Medical University —E													2			6						84
85	Ensworth Central Medical College —R												2			8	25						85
86	Barnes Medical College —R*	1		10	1	2						4	76	6	3	5	8	5	1	1		1	86
87	St Louis University Med Dept —R	1		6	2	3						1	64	1	2	11	9	8	4		1		87
88	St Louis Coll of Phys and Surgs —R			5		2					1		90	8	8	17	2	6	1				88
89	American Medical College —E			3		1								1									89
90	Homeo Med College of Missouri —H		1	2									12		8	2	1						90
91	Dept of Med of the Univ of Missouri			1		1							1		1	2	1		1				91
92	Univ of Nebraska Coll of Med —R															8							92
93	John A Creighton Med College —R												2			50	1						93
94	Lincoln Med Coll of Cotner Univ —E			1		1										1	4						94
95	Nebraska College of Medicine —R															1	1						95
96	Dartmouth Medical College —R						6						2							4		10	96
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

OF MEDICAL STUDENTS BY STATES

Marginal Number	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	New Hampshire	New Jersey	New Mexico	New York	Nevada	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Foreign	P Is Ha P R	Total	Marginal Number
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
	501	332	678	1 057	41	318	120	450	21	3 124	10	494	79	922	110	151	2035	123	325	63	6[illegible]3	1 008	111	125	579	101	303	414	6	574	37	21 950	
1			3							1									1		3	1								1		113	1
2			14																1		1											170	2
3	1			1						2					1							1	1									182	3
4			2	3								1									4	3								2		87	4
5		3									3			1		8	2	1		1										13		112	5
6					1						1																			2		51	6
7																																28	7
8				2	1	1				1	2					2		1			1	2	5		1	1		1		10	2	79	8
9																																10	9
10	1					2		1	1	2			1	2										1		2				3		99	10
11			1	4					2	1			1		1	1				1								1		5		31	11
12	1		1	4		1	1	3	1	6			1	1			4						1		1			2	1	2		101	12
13	4	2	1	4			1			3							3					2		2				1		6		42	13
14	1	1	1	1			1			3		1		2			1				1					1	1			2		58	14
15	3			1		1		2		9				1		2	3	3						1						7		153	15
16	6	3	1	3		2	2	4		10		6	1	5	3		20	1	4	1	2	3	4	1	21	1	2	2		3	1	215	16
17	1							1		12				1			12	8							7		3	2		3		82	17
18			2	2				2		5		7		3			11	1	7	1	4	4			26		6			35		186	18
19			6						1	1		4			1				13		1	9								3		209	19
20			2							1		8			1				9		1	1					2					283	20
21									1	1											1	1										57	21
22			1							1							1		15						1					1		97	22
23																																12	23
24	10		1	1			1	1						4			2				1							1		14		46	24
25	4	7		2		7				4				5	1		7			2	1	1	1					7		4		153	25
26	3	7	4	12		3			3			2	8	15	2		3		3		10	5	3		4					3		212	26
27														1														1				28	27
28	12	10		9	3	8		1		4			1	9		1		1	1	8		3	3			5	1	46		12		501	28
29	6	3	1	1	1	2				6				6			3			1		1	1	1		2		8		7		139	29
30	3	1		1		1				2				1	1							2	1		1	1				4		80	30
31																																195	31
32	21	14		6	4	9		1	1	3		2	12	12	1	5	1			11	2	3	7			9	2	48	1	6		473	32
33	20	17	4	16	3	15	1		1	2		2	6	18	5	4	7	1	1	2	3	9	7	1	1	5	1	48	1	14		567	33
34																																250	34
35	20	10	1	4	3	2				5	1		4	20			12	1		1	2	2					4	11		5		239	35
36				1						1	1			3					1		1							2		7		126	36
37	2				2								1	12			1			1	1							1		1		227	37
38										1				3																3		25	38
39																																12	39
40														4								1								1		109	40
41		1		3	1								1							1						1				1		76	41
42	1	2		9	1	1						1				1				1								3				127	42
43																																29	43
44	1	1																								1						44	44
45		5		1	1	1							1			1				5			1			1		2		2		272	45
46				2									2	1	1		1					1	1									82	46
47				17											3																	115	47
48	1	1	7	2	1									3			2				4	7			7	1	9			1		256	48
49	3	4	2	9	1	2	1	4		3	1	2		8			3				5	20		4		3	15	2		1		270	49
50			12	3		1			2	2				1			5				4	18			3		9				3	180	50
51				1								1									1											60	51
52																																11	52
53	1		11	14		1		1		4		2		9		1	13		6	1	7	7			6		53				1	456	53
54			14																			3								3		51	54
55			99	1								2		1	1				5		6	73			1					7		516	55
56							1											1												1		94	56
57	1		1				9	35		71		12		7		1	60	16	6					10	21	1	25			28		481	57
58								1									1	1							1		1			1		23	58
59			1		1	1		19		18		10		13			43	13	3	1	3		3		9		48			15	8	302	59
60	2	2	1	6	1	2	3	9		25		7	2	15		3	29	2	4	1	1	6	1	1	10	2	4	10				264	60
61										3							6								1		1					22	61
62								2		2		8		1			3		1								1	1		1	4	84	62
63								5		14		33					16	1	17			1			23		15			11	8	811	63
64							3	2		8		1					16	2	3		1	8			4		14			10		125	64
65			1				1	8		5							4	5						4	1					6		96	65
66							8			6		1					1	2	1											9		123	66
67	2	2		2		1	12	1		12		8		7		1	6	22	1			2		2	2		1	1		16	2	866	67
68							26			1				1			1	13				1		3						8		876	68
69	104					1		1		3			1	5			1				1			1				2		32	1	158	69
70	19									4				2																2		29	70
71	6																															6	71
72	10																															10	72
73	103	4	1	3	5	3		1		23		2	1	23	1		22	2	1	4		4	2	1	2	3	1	5		9	1	871	73
74	29			1		1				17				18			10			2	1									1		82	74
75		14																														14	75
76		157			1								10							4						1		7				188	76
77	1	85			1					1			8	1			2			2				1		2		3		2		109	77
78			18																													18	78
79			97	1															1													106	79
80	1		1	121						1				1			1				2	2				3				10		215	80
81		1		123	1	3			2						5	1										2			1			238	81
82				17		1				2				1	1		1				1					1	1					74	82
83	1			23																										1		27	83
84				33										1	3		1															36	84
85				74		2							1		2		1					1						1				117	85
86	1	3	5	130	1	1			1			1		4	3					1	4	13	1		1		3	1		4		352	86
87	2	1	1	101		1			1	3				5	1	2	3					4				7	1	17		6	1	268	87
88	2	2	1	86	1	1			1						6	3	3					9				3				3		270	88
89				22											1																	38	89
90	2			20																										1		44	90
91				51		1				1						1					1	1				1				1		63	91
92		1				2														1												82	92
93	2	2		1		93							1	1						2						2		1	2	2		167	93
94				2		39														1		1										50	94
95	1					23																								1		27	95
96							21	1										1						7						1		62	96
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Marginal Number
		678	10	510	375	225	178	51	120	120	505	31	2120	120	752	785	457	812	532	136	332	950	
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist Colum	Florida	Georgia	Idaho	Illinois	Indian Ter	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	
97	Albany Medical College —R							1														3	97
98	College of Physicians and Surgeons —R	4			4		9				2		4		8	2	2	1		4	2	9	98
99	Cornell University Medical College —R	1		1	2		2											1	1	4		8	99
100	Eclectic Medical College —E				1																		100
101	Long Island College Hospital —H						6	1	1									2		2	1		101
102	New York Homeo M C and Hosp —H				1		5		1							2				1		1	102
103	N Y Med Coll and Hosp for Wom —H																					2	103
104	Univ and Bellevue Hosp Med Coll —R				1	2	14						1		2			3		1	1	8	104
105	Syracuse Univ Coll of Med —R						1										1					2	105
106	University of Buffalo, Medical Dept —R														1							1	106
107	Leonard Medical School —R	12		1			1		2	5	11			1					1		2		107
108	Wake Forest School of Medicine —R																						108
109	North Carolina Medical College —R								1														109
110	Med Dept Univ of North Carolina —R									2	1												110
111	Med Dept , Univ of North Dakota —R																						111
112	Western Reserve Univ Med Coll —R														6		2					2	112
113	Cleveland Coll of Phys and Surgs —R					1																	113
114	Cleveland Homeopathic Med Coll —H				1																		114
115	Eclectic Medical Institute —E			1		1				1			7		7	2	1	10					115
116	Medical College of Ohio —R								1						6			20					116
117	Pulte Medical College —H																	1					117
118	Miami Medical College —R	1											1		1			7					118
119	Ohio Medical University —R											1	2		2							3	119
120	Starling Medical College —R												1		1			2					120
121	Toledo Medical College —R																						121
122	College of Medicine, Epworth Univ —R													1									122
123	School of Med , Univ of Oklahoma —R													1									123
124	University of Oregon, Medical Dept —R				1											1							124
125	Medical Dept , Willamette Univ —R												1										125
126	Temple Coll of Phila , Dept of Med —R*						2														1		126
127	Univ of Pennsylvania Dept of Med —R	6		2	2	2	2	5	1	2	2	1	2		7	6	7	1		2	4	15	127
128	Hahnemann Med Coll and Hosp —H				1		3	3	2				2			1	1	2		2	3	6	128
129	Jefferson Medical College —R	2		3	6		9	11	1	1	4	2	3		3	3	5	3		4		15	129
130	Woman's M C of Pennsylvania —R				2	1		1	8		1						2	3		2	1	4	130
131	Medico-Chirur Coll of Philadelphia —R						2	4				1				2		2			2	2	131
132	Western Pennsylvania Med Coll —R*				1								5		4								132
133	Med Coll of State of South Carolina —R									5													133
134	Tennessee Medical College —R									1								10					134
135	Knoxville Medical College —R	1		1						3	2				1								135
136	Med Dept University of Nashville —R	50		32						8	6		6		2		1	14	52				136
137	Vanderbilt University, Med Dept —R	30		6	2						7		3	2				21	10				137
138	University of Tennessee, Med Dept —R	18		4	8					1	1		8	1		1		17	4				138
139	Meharry Medical College —R	20		15						13	29		8	2	2	1	4	14	8		1		139
140	Memphis Hospital Medical College —R	17		54						1				9					69				140
141	Memphis Coll of Phys and Surgs —R	1		3							8				1				3				141
142	University of the South —R	23		2	1					2	17			2				3	18				142
143	Chattanooga Medical College —R	58	1	8	1		3			8	11	2	3	3		2		6	1		1		143
144	Univ of West Tennessee Med Dept —R	1		4										1					4				144
145	Med Dept Ft Worth University —R	1	1	2	1									16					2				145
146	University of Texas, Dept of Med —R																			1			146
147	Baylor Univ Coll of Med —R													2		2			2				147
148	Physio Medical Coll of Texas —Ph M			4		1								4	1								148
149	Gate City Medical College —R	4		43							4		1	18					19			1	149
150	Southwestern Univ Med Coll —R		1																				150
151	College of Physicians and Surgeons —R	1		12									1	15		1	9	1	6			1	151
152	University of Utah, Medical Dept —R											1											152
153	University of Vermont, Medical Dept —R						7													8		23	153
154	Medical College of Virginia —R	2								2													154
155	University College of Medicine —R	2			1			2		1	4							1			1	1	155
156	University of Virginia, Dept of Med —R	6		4			1	1	1		2						1	3	1		4		156
157	University of West Virginia —R																						157
158	Milwaukee Medical College —R						1									3							158
159	Wisconsin Coll of Phys and Surgs —R														1								159
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

*Total exact distribution based on that of 1905-6 **Figures for 1905-6

SEC 5—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least four courses of medical instruction each course of at least six months duration no two courses of which shall have been in the same calendar year

SEC 6—Colleges members of this Association, are free to give to students who have met the entrance requirements of the Association additional credit for time on the four years' course as follows (a) To students having the A B, B S, or equivalent degree from reputable literary colleges, one year of time (b) To graduates and students of colleges of homeopathic or eclectic medicine, *as many years as they attended those colleges,* provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics (c) To graduates of reputable colleges of dentistry, pharmacy, and veterinary medicine one year of time

On April 10, 1905, a new constitution was adopted and the following requirements became effective

ARTICLE III

SECTION 1—Every college holding membership in this Association shall demand of each student under the condition hereinafter stated as a minimum requirement for admission to the medical course

(*a*) A bachelor s degree from an approved college or university,

(*b*) A diploma from an accredited high school, normal school o academy requiring for admission evidence of the completion of a eight year course in primary and intermediate grades, and fo graduation not less than four years of study embracing not les than two years (4 points) of foreign language of which one mus be Latin, two years (4 points) of mathematics two years (points) of English, one year (2 points) of history two years (points) of laboratory science, and six years (12 points) of furthe credit in language, literature, history or science (See amend ment, May 6 1907)

(*c*) An examination in the following branches A Required 18 points Mathematics, 4 points, English, 4 points History points, Language (2 must be Latin), 4 points, Science (take from physics, chemistry, botany, zoology), 4 points See amendment, May 6, 1907)

B Optional (to 12 points) English, 2 points, History points, Language, 6 points Manual Training, 2 points, Mechanical Drawing 1 point Natural Science (botany, biology, zoology) 2 points, Physical Science (chemistry physics), 2 points, Trigonometry 1 point, Astronomy 1 Civics 1 Geology 1 Physical Geography 1, Physiology and Hygiene 1, Political Economy 1

(One point in any subject in a high school or academic cours demands not less than five periods per week of forty five minute each for eighteen weeks)

(*d*) Certificates from reputable instructors recognized by th superintendent hereinafter to be mentioned or by any state boar

MEDICAL STUDENTS BY STATES

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
	501	332	678	1 057	41	318	120	450	21	2 321	10	404	79	923	110	151	2035	122	325	63	673	1 008	111	125	579	101	363	414	6	574	37	24 256	
Marginal Number	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	New Hampshire	New Jersey	New Mexico	New York	Nevada	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Foreign	P Is Ha, P R	Total	Marginal Number
97							1	2		185					1		1							1								105	97
98		3	1	3	1		2	49		230	1	1		6		2	10	2	1		1	5	1	1		1	1	4		11	1	337	98
99						1	1	22		280		1		2		1	5	2				1								6		312	99
100								10		72																						93	100
101								22		205				3				1												8		312	101
102								20		73							2													3		107	102
103	1							2		11							1													7		21	103
104		1						64		85				3			6	1						1		1				7		502	104
105								2		135							6													9		153	105
106										205				2			3													1		213	106
107			5	1			1	3		3		61					7		9			1			25					7		149	107
108												33							5						1							79	108
109												60							5						2		1					69	109
110								1		1		102					1		2						4							114	110
111													15																			15	111
112		1								3				69			9			1							1					87	112
113	1						1							79			2				1									7		92	113
114										5				23			8													1		43	114
115		1						2						39			8				2	3					19					97	115
116							1			1				94									1				2			7		133	116
117														13			1															15	117
118														64													1					75	118
119								1						113			8										2					132	119
120	1				1					1				63																		70	120
121	1													19																		20	121
122															14							1										16	122
123															11												1					13	123
124							1			1						59	1									18		1		3		80	124
125																43										1						45	125
126										1						1	77													6		83	126
127	1	5	3	2			4	33		21		10		20		1	351	5	4		2	9	2		3	7	4	2		22	3	588	127
128			1	1				24		11				5			115									1		1		3		185	128
129	3	2	2	3	1	2	3	43		19		22		17	1	6	301	6	1	1	3	2	17	2	4	4	9	3		17		620	129
130	8		2	1		2	1	12		12				4		1	72	1	2							1				19		152	130
131	1					2		29	1	12				3			356	2					1			1				11		434	131
132				2						2				19			296										19					316	132
133																			125													130	133
134												2				1			1		61				3	1						80	134
135			1									4			1		1		1		12	1								3		32	135
136			58	3						2		10			2				19		121	22			4		2					414	136
137			16	2								2			2				8		76	22			2	1		1		2		215	137
138			12	2															1		93	5								1		167	138
139			43	15				1		1		5		3	4		2		18		53	23			1		1			8		300	139
140			134	3											2		2				64	43										388	140
141			25																		20	8										64	141
142	1		30							1		2					8		4		17	14			3		1			1		150	142
143	3		8		1		1	1	1	2		15		7	2	2	5		4	1	61	6	2		9	1	9	2		3		249	143
144			3																1		7	1								1		23	144
145				1										1	21							129								1		176	145
146			1																			186										188	146
147																						51										57	147
148				5																		29										44	148
149			7	3																		96								2		198	149
150																						67										68	150
151									1	1					4						2	44			3	1						103	151
152					1																		44									46	152
153							16			22				1			8	2						70						4		165	153
154	1							1		1		15		1			1		5		1	1			162		19			1		212	154
155								5		1		34							1		1				120		5			1	1	182	155
156			7		1					3		6		1		1	3	1	8		4				74		3	1		2		134	156
157																	4										40			1		45	157
158	8	2						1		4				1						3					1			101		2		130	158
159		1						1		1																		57		1		62	159
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	

of medical examiners duly authorized by law may be accepted in lieu of any part of this examination. (See amendment March 19 1906)

Sec 2—This examination must be conducted by or under the authority of the superintendent of public instruction of the city or state in which the college is located In no case shall it be conducted by any person connected with the faculty medical or otherwise of the institution to which the student is seeking admission (See amendment, March 19 1906)

Sec 3—A student may be allowed to enter on his medical work conditioned in not more than six points and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Sec 4—Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association excepting for the fourth year of the course but no member of this Association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw and receiving from the dean of such college a direct written communication certifying to the applicant s professional and moral qualifications and to the exact work he has done in said college

Sec 5—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years each annual course to have been of not less than thirty teaching weeks duration and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course.

Sec 6—Credit may be given to the holder of a Bachelor s degree from an approved college or university for any work in the medical branches which he has successfully completed in his college course only so far as it is the full equivalent of corresponding work in the medical curriculum The holder of such Bachelor s degree may also be given time credits of not exceeding one year provided that such student has had at least 40 hours in physics 144 hours in chemistry 24 hours in osteology 292 hours in human or comparative anatomy 124 hours in histology 85 hours in embryology 145 hours in physiology and 46 hours in materia medica provided that the applicant for such time credits satisfies the professors of the chairs mentioned in the medical school as to his proficiency in these first year medical studies and satisfies the examiner as provided for in Section 2 Article III that his studies for which the degree was conferred include the above requirements Such student may be allowed to complete a course for the medical degree in not less than 31 months provided he completes the remainder of the medical curriculum in that time (See amendment, May 6 1907)

Sec 7—A college which gives less than a four years course of study but does not graduate students and is possessed of other required qualifications may be admitted to membership

Sec 8—Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum

TABLE 8.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1906

State Board of	Total reg through reciprocity by each state	Connecticut	Colorado	Delaware	Dist of Columbia	Georgia	Illinois	Indiana	Iowa	Kansas	Kentucky	Maine	Maryland	Massachusetts	Michigan	Minnesota	Missouri	Montana	Nebraska	New Hampshire	New Jersey	New York	North Carolina	North Dakota	Ohio	Pennsylvania	South Carolina	Texas	Vermont	Virginia	Wisconsin	Wyoming
Connecticut	8											2		2								4										
Delaware	5												3										1			1						
District of Columbia	11					1							6												2					1	1	
Georgia	6				1			1					1																	3		
Illinois	43							2	27	2			2		4				1						1						4	
Indiana	21						4		3	2	3	1			2				1						3						2	
Iowa	63			1			37	2		2					3		5		9		1		1								2	
Kansas	56	1	1				13	3	9		1		1				18		6					1				2				
Kentucky	2														1		1															
Maryland	8			1	4																				1				1	1		
Michigan	61						27	5	7	1		1	3			1	4	1	1			2			3						5	
Minnesota	42						20	1	11				3												1						6	
Missouri	46		1		1			2	6	29	2				4																1	
Nebraska	56						19	2	19	7	2		1		1							1			3						1	
New Jersey	63						3					1				2				2		51			1				3			
New York	21																				21											
North Dakota	21						10		7						2																1	1
Ohio	23		1				12	2				1			6																1	
South Carolina	8						2			1			4																	1		
South Dakota	29								14							13															2	
Texas	8																													8		
Vermont	4						1						1		1						1											
Virginia	19				2	1	1		1				11		1												1				1	
Wisconsin	61	1					36		12	1					3	4			3						1							
Total received from each state through reciprocity	685	2	3	2	8	2	185	20	116	45	8	6	36	2	28	20	28	1	21	2	23	58	2	1	16	1	1	2	4	14	27	1

Table 8 shows the distribution of physicians registered through reciprocity during 1906 Reports have been received from all states and the statistics are now complete Reading from left to right gives the number of physicians coming into the state named as well as showing from what states they came Reading from above downward gives the number of physicians going out of the state named as well as showing in what states they were licensed For example, the first line reading from left to right shows that Connecticut licensed 8 physicians through reciprocity, 2 of which came from Maine, 2 from Massachusetts, and 4 from New York, while the first line reading from above downward shows that 2 physicians from Connecticut were registered elsewhere through reciprocity, 1 locating in Kansas and the other in Wisconsin

The states which registered the largest numbers through reciprocity were Iowa and New Jersey, each having registered 63 Michigan and Wisconsin registered 61 each, while Kansas and Nebraska registered 56 each

Illinois had the largest number leave to secure license elsewhere under the reciprocity provision, the total being 185, Iowa coming second with 116 New York third with 58 and Kansas fourth with 45

Altogether 685 physicians were licensed through reciprocity during 1906 who otherwise would have been compelled to undergo the second exacting written examination before securing licenses in their new locations

ARTICLE V

SECTION 1 —The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the following table, and no college shall be recognized that falls below this standard over 20 per cent in any one branch or over 10 per cent in the total Laboratory or clinic hours may be substituted for didactic hours

CURRICULUM

	No of Hours of Lectures	Hours of Laboratory	Hours of Clinics	Total
Histology	30	60		90
Embryology	30	60		90
Osteology	30			30
Anatomy	190	230		420
Physiology	180	120		300
Chemistry and Toxicology	100	200		300
Materia Medica	40	20		60
Pharmacology	40	20		60
Therapeutics	90			90
Bacteriology	40	100		140
Pathology	100	140		240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60		90
Physical Diagnosis	20		80	100
Practice of Medicine	180		360	540
Surgery	180		360	540
Obstetrics	100		60	160
Gynecology	50		110	160
Pediatrics	40		60	100
Eye and Ear	30		30	60
Nose and Throat	30		30	60
Mental and Nervous Diseases	60		60	120
Electro Therapeutics	20		40	60
Genito Urinary Diseases	30		30	60
Dermatology and Syphilis	20		20	40
Hygiene and Public Health	30			30
Dietetics	30			30
Medical Jurisprudence	30			30
	1,750	1 010	1,240	4 000

On March 19, 1906, Article III, Section 1 (*d*), and Section 2 were amended as follows

SECTION 1 —(*d*) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states not having a board of examiners, may be accepted in lieu of any part of this examination

SEC 2 —This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission

On May 6, 1907, Article III, Section 1 (*b*), Section 1 (*c*) A, and Section 6 were amended so as to require two years of Latin instead of one year, as well as to abolish all time credits for baccalaureate degrees, and Section 2 was added to Article V The new and amended portions are as follows

SECTION 1 — (*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of Latin two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, two years (4 points) of laboratory science, and six years (12 points) of further credit in language, literature, history or science

(*c*) An examination in the following branches A Required (18 points) Mathematics (4 points), English (4 points), History (2 points), Latin (4 points) Science (taken from physics, chemistry, botany zoology), 4 points

SEC 6 —No time credit shall be given to holders of a Bachelor s degree, but subject credit may be given on satisfactory examination Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine

ART V, SEC 2 —Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years

The *following colleges are members*

College of Medicine University of Southern California, Los Angeles, Cal , *Cooper Medical College, San Francisco Cal* , University of California Medical Department, Berkeley and San Francisco Cal Colorado School of Medicine, University of Colorado, Boulder Colo , Denver and Gross College of Medicine Medical Department of the University of Denver Denver, Colo , Yale University Department of Medicine (Yale Medical School) New Haven Conn George Washington University Department of Medicine, Washington, D C , Georgetown University School of Medicine Washington D C Howard University Medical Department, Washington, D C , American Medical Missionary College Battle Creek Mich , and Chicago Ill , College of Medicine of the University of Illinois (College of Physicians and Surgeons), Chicago, Ill Illinois Medical College Chicago, Ill , Indiana Medical College, School of Medicine Purdue University Indianapolis Ind University of Indiana School of Medicine Bloomington, Ind , State College of Physicians and Surgeons Indianapolis, Ind Drake University College of Medicine, Des Moines, Iowa , College of Medicine

TABLE 10 —SECONDARY SCHOOLS IN THE UNITED STATES IN 1904-5

Based on the Report of the United States Bureau of Education 1907 and Reports from State Superintendents of Public Instruction

Marginal Number	State	Number of grades preliminary to High School course	Public High Schools and Academies					Private High Schools and Academies					Public and Private High Schools and Academies					Proportion to the population—estimate 1905—one school to every	Average number of teachers to each school	Average number of students to each teacher	Average number of secondary students in each school	Average number of elementary students in each school	Marginal Number
			Having a course of four years	Having a course of three years	Having a course of two years or less	Length of course not stated	Total	Having a course of four years	Having a course of three years	Having a course of two years or less	Length of course not stated	Total	Having a course of four years	Having a course of three years	Having a course of two years or less	Length of course not stated	Total						
	Column number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	Alabama	7	36	23	7	14	80	22	2	1	4	29	58	25	8	18	109	18 223	3 1	31 1	59 4	45 5	1
2	Arizona	8	3	0	1	0	4	2	0	0	0	2	5	0	1	0	6	23,379	2 8	36 1	56 8	42 5	2
3	Arkansas	7	19	23	12	5	59	17	2	1	2	22	36	25	13	7	81	17 324	2 7	37 2	64 6	36 0	3
4	California	8	144	3	2	0	149	47	5	0	4	56	191	8	2	4	205	7 907	6 2	20 7	126 1	39 8	4
5	Colorado	8	47	4	1	0	52	5	1	0	0	6	52	5	1	0	58	10 395	6.8	24 2	145 8	10 2	5
6	Connecticut	8-9	54	11	10	1	76	44	2	1	4	51	98	13	11	5	127	7 791	5 9	19 1	98 4	14 9	6
7	Delaware	8	7	6	2	0	15	4	0	0	0	4	11	6	2	0	19	10,150	5 0	24 4	85 8	33 8	7
8	Dist of Colum	8	6	0	1	0	7	12	1	0	8	21	18	1	1	8	28	10 817	14 2	15 0	177 7	35 8	8
9	Florida	8	31	6	9	3	49	5	1	0	1	7	36	7	9	4	56	10,663	2 4	42 3	42 5	69 4	9
10	Georgia	6-7	40	74	17	9	140	33	14	4	4	55	73	88	21	13	195	12 338	2 7	40 3	52 5	50 5	10
11	Idaho	8	5	4	3	0	12	3	1	0	0	4	8	5	3	0	16	12 309	4 4	26 6	81 1	35 3	11
12	Illinois	8	304	101	8	4	417	51	7	1	1	60	355	108	9	5	477	11,151	4 7	28 4	109 3	25 3	12
13	Indiana	8	316	190	51	14	571	20	1	0	3	24	336	191	51	17	595	4 502	3 0	29 7	62 8	26 1	13
14	Ind Territory	8	6	0	0	2	8	4	2	0	1	7	10	2	0	3	15	33 200	2 6	47 8	52 6	71 0	14
15	Iowa	8	263	71	14	3	351	28	6	1	1	36	291	77	15	4	387	6 180	3 9	27 0	90 2	15 5	15
16	Kansas	8	153	83	54	0	290	9	2	0	1	12	162	85	54	1	302	5 240	2 7	32 6	69 1	19 8	16
-	Kentucky	8	45	20	11	5	81	51	12	0	6	69	96	32	11	11	150	15 276	3 9	23 3	67 5	43 0	17
19	Louisiana	8	23	16	4	1	44	14	7	0	2	23	37	23	4	3	67	22,684	3 8	27 2	65 1	39 1	18
19	Maine	9	157	6	1	11	175	30	1	0	0	31	187	7	1	11	206	3 452	3 0	23 7	64 7	5 4	19
20	Maryland	6-7	46	15	1	3	65	25	4	0	12	41	71	19	1	15	106	11,895	4 7	21 6	83 1	30 1	20
21	Massachusetts	8	221	14	9	8	252	73	5	0	12	90	294	19	9	20	342	9 131	7 9	27 1	153 9	59 6	21
22	Michigan	8	285	41	44	3	373	18	0	1	0	19	303	41	45	3	392	6 621	4 0	23 1	88 5	23 3	22
23	Minnesota	8	159	2	3	0	164	24	2	0	3	29	183	4	3	3	193	10,217	5 0	24 2	106 3	15 6	23
24	Mississippi	8	19	55	18	13	100	15	7	5	5	32	34	62	18	18	132	12 743	2 4	33 1	44 1	46 6	24
25	Missouri	7-8	146	88	94	9	337	45	3	0	11	59	191	91	94	20	396	8 385	3 7	23 3	77 8	25 9	25
26	Montana	8	16	8	0	1	25	6	0	0	0	6	22	8	0	1	31	9 469	5 1	22 6	91 8	24 4	26
27	Nebraska	8	86	103	161	10	360	15	4	0	2	21	101	107	161	12	381	2 808	2 3	37 9	49 7	37 3	27
28	Nevada	8	1	4	1	0	6						1	4	1	0	6	7 056	1 7	50 9	28 5	57 5	28
29	N Hampshire	8	50	3	4	1	53	26	2	0	1	29	76	5	1	2	84	5 109	4 0	23 3	84 1	20 2	29
30	New Jersey	8	68	14	15	4	101	51	2	0	5	58	119	16	15	9	159	13 227	7 2	10 3	116 0	21 5	30
31	New Mexico	7	8	1	1	0	10	1	0	1	0	2	9	1	2	0	12	17,735	3 1	20 9	56 2	26 9	31
32	New York	8	467	37	24	4	532	157	5	2	21	185	624	42	26	25	717	11 021	6 5	28 1	132 3	54 2	32
33	N Carolina	7	13	17	5	8	43	35	10	2	22	69	48	27	7	30	112	18 141	3 5	37 2	67 3	53 5	33
34	N Dakota	8	24	9	5	0	38	1	0	0	0	1	25	9	5	0	39	9 826	3 1	24 4	58 1	18 2	34
35	Ohio	8	441	282	72	6	801	41	1	2	2	46	482	283	74	8	847	5 195	3 1	30 5	68 5	24 9	35
36	Oklahoma	8	18	2	0	1	21	1	2	0	1	4	19	4	0	2	25	19,920	4 0	25 5	91 2	11 7	36
37	Oregon	8	23	7	39	1	70	10	1	0	1	12	33	8	39	2	82	5,627	2 9	32 3	60 4	33 7	37
38	Pennsylvania	8	198	226	64	0	488	83	11	3	26	123	281	237	67	26	611	11 100	4 4	26 7	90 4	26 1	38
39	Rhode Island	8-9	19	2	0	0	21	10	0	0	4	14	29	2	0	4	35	13 491	8 8	19 4	147 6	23 4	39
40	S Carolina	8-9	25	42	14	19	100	12	1	1	1	15	37	43	15	20	115	12 477	2 6	33 5	50 0	36 0	40
41	S Dakota	8	43	27	33	0	103	5	1	0	0	6	48	28	33	0	109	3,927	2 4	32 6	44 9	33 8	41
42	Tennessee	7	23	54	11	11	99	39	7	2	10	58	62	61	13	21	157	13 676	2 7	37 8	61 0	48 4	42
43	Texas	6-7	172	105	11	10	298	38	5	2	2	47	210	110	13	12	345	10 015	3 2	30 1	71 0	25 6	43
44	Utah	8	4	2	7	0	13	11	0	1	0	12	15	2	8	0	25	12 389	9 1	25 5	180 7	52 0	44
45	Vermont	9	64	3	4	2	73	18	1	0	0	19	82	4	4	2	92	3 796	3 2	27 6	64 2	24 2	45
46	Virginia	7-8	25	29	8	8	70	40	7	2	12	61	65	36	10	20	131	14 911	3 6	28 6	63 1	33 6	46
47	Washington	8	51	8	31	0	90	11	2	0	2	15	62	10	31	2	105	5 700	3 9	27 8	83 2	24 8	47
48	W Virginia	8-9	22	13	2	0	37	7	2	0	3	12	29	15	2	3	49	21,567	4 2	22 7	71 2	23 3	48
49	Wisconsin	8-9	223	14	1	0	237	21	0	0	1	22	243	14	1	1	259	8 714	4 7	23 1	98 3	10 3	49
50	Wyoming	7-8	6	4	1	0	11	1	0	0	0	1	7	4	1	0	12	8 960	2 8	27 4	49 8	27 9	50
—	Totals		4 624	1 872	883	194	7 573	1 241	152	33	201	1 627	5 865	2,024	916	395	9 200	8 977	4 2	23 0	85 4	31.3	
—	Column number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

The above table gives statistics showing the number of public and private high schools and academies in each state, together with the numbers having respectively courses of four years three years and two years or less The number of years in elementary grades required in each state preliminary to the high school course is given in the first column In the last five columns respectively are given the proportion of high schools to the population in each state the average number of teachers to each school the average number of students to each teacher and the average number of secondary students (high school grade) and elementary students (common school grade) in each school

In proportion to the population when we add together public and private high schools (note Columns 16 and 17) Nebraska seems to be best provided with high schools having 1 to every 2 808 people although most of the high schools have courses of less than four years The states having the smallest number in proportion to the population are Indian Territory 1 to every 33 200 Arizona 1 to 23 379 Louisiana, 1 to 22 684 West Virginia 1 to 21 567 Oklahoma 1 to 19 920 Alabama 1 to 18 223 and North Carolina 1 to 18 141 In twenty nine states the proportion of high schools to the population is 1 to 10,000 or more people The proportion for the entire country is 1 high school to every 8 977 persons

Column 18 shows the average number of teachers in each school, while Column 19 which gives the average number of students to each teacher shows whether the schools of the state on an average are overcrowded or not In Nevada it will be seen that for every teacher in the high schools are 50 9 students In Indian Territory there are 47 8 students to every teacher In Florida 42 3 and in Georgia 40 3 to every teacher or as many students that there are 85 or more students to each teacher

Column 20 shows the average number of students in each school belonging strictly in the high school grade The figures in Column 21 give the average number of students of elementary grades in each high school It appears therefore that many of the high schools are not limited to the strictly high school grades

University of Iowa Iowa City Iowa Sioux City College of Medicine Sioux City Iowa Kansas Medical College, Medical Department of Washburne College, Topeka Kan School of Medicine University of Kansas Lawrence Kan Hospital College of Medicine Louisville Ky Kentucky School of Medicine Louisville Ky, Louisville Medical College, Louisville Ky Flint Medical College Medical Department New Orleans University New Orleans La Baltimore Medical College Baltimore Md College of Physicians and Surgeons Baltimore Md. Johns Hopkins University Medical Department, Baltimore Md. University of Maryland School of Medicine Baltimore Md. Woman s Medical College Baltimore, Md Detroit College of Medicine Detroit Mich University of Michigan Department of Medicine and Surgery Ann Arbor Mich. Hamline University College of Medicine, Minneapolis, Minn , Medical Department University of Mississippi, Oxford Miss University of Missouri Department of Medicine, Columbia Mo University Medical College Kansas City Mo Medical Department St. Louis University (Marion Sims Beaumont College of Medicine) St. Louis, Mo Washington University Medical Department, St. Louis Mo John A Creighton Medical College Medical Department of Creighton University Omaha, Neb University of Nebraska College of Medicine, Lincoln and Omaha, Neb University of Buffalo Medical Department, Buffalo N Y University of North Carolina Medical Department, Raleigh and Chapel Hill N C Wake Forest College of Medicine Wake Forest N C., University of North Dakota Medical Department University, N D Miami Medical College Cincinnati Ohio Cleveland College of Physicians and Surgeons Medical Department Ohio Wesleyan University Cleveland

Ohio Western Reserve University Medical College Cleveland Ohio, Starling-Ohio Medical College Columbus Ohio University of Oklahoma Medical Department Norman, Okla University of Oregon Medical Department Portland Ore, Willamette University Medical Department, Salem Ore Meharry Medical College, Medical Department Walden University Nashville, Tenn, Vanderbilt University, Medical Department, Nashville Tenn, University College of Medicine Richmond, Va University of West Virginia Medical Department Morgantown, W Va, Marquette College Medical Department (Milwaukee Medical College) Milwaukee Wis, Wisconsin College of Physicians and Surgeons, Milwaukee, Wis

The secretary treasurer of the Association is Dr Fred C Zapffe, 1764 Lexington Street, Chicago

SOUTHERN MEDICAL COLLEGE ASSOCIATION

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association

Section 3—He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school The minimum preliminary education required by the Southern Medical College Association shall be, after Jan 1 1906, a grammar school education and two years successful attendance at a recognized preparatory school or a high school or its equivalent, said equivalent to be *determined* by a superintendent of public instruction A student may be given one month from date of his admission to submit his *certificate of qualification And if he fails to possess the requisite* educational qualifications in one or more branches, he may matriculate *and attend his first course of* lectures, *but must present the* requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each

The following colleges are members

Medical College *of Alabama* Mobile *Ala*, Birmingham Medical College, Birmingham Ala Medical College of Georgia Augusta, Ga Medical Department, *University of* Mississippi Oxford Miss, Medical Department Epworth University Oklahoma Okla Medical Department University of Tennessee Nashville, Tenn Medical Department, University of Nashville, Nashville Tenn, Medical Department Vanderbilt University, Nashville Tenn, Memphis Hospital Medical College Memphis, Tenn Chattanooga Medical College Chattanooga Tenn Tennessee Medical College Knoxville Tenn Medical Department University of the South Sewanee Tenn Medical Department Fort Worth University Fort Worth Texas Medical Department Baylor University, Dallas, Texas Medical Department Southwestern University, Dallas Texas, Medical College of Virginia Richmond, Va

The president is Dr *Christopher Tompkins, Richmond, Va*, the secretary-treasurer is Dr G C Savage, Nashville, Tenn

AMERICAN INSTITUTE OF HOMEOPATHY

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows

1 English Composition—Exercise on assigned theme not less than 200 words Exercise in reading Exercise in correction of ungrammatical sentences

2 Mathematics—Arithmetical exercises in (a) vulgar fractions (b) decimals (c) percentage (d) proportion (e) square and cube root (f) weights and measures (g) decimal system Mensuration—(*a*) *Definition of terms* (b) exercises under the more fundamental rules

3 Geography—General facts about North America

4 History—General with particular reference to human progress in art, science and letters (The examination to avoid exact dates and minor details)

5 Latin Language—(a) Grammar, (b) four books of Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are

Hahnemann Medical College of the Pacific Denver Homeopathic Medical College, Hahnemann Medical College Chicago Hering Medical College, Homeopathic Medical Department of the State University of Iowa Southwestern Homeopathic College, Louisville Ky, Kansas City Hahnemann Medical College, Southern Homeopathic Medical College Baltimore Md Boston University School of Medicine Homeopathic Medical College of University of Michigan, Detroit Homeopathic College College of Homeopathic Medicine and Surgery of University of Minnesota, Homeopathic Medical College of Missouri New York Homeopathic Medical College New York Medical College for Women Cleveland Homeopathic Medical College, Pulte Medical College, Cincinnati Hahnemann Medical College of Philadelphia

The secretary is Dr Frank Kraft, 2055 East Ninetieth Street, Cleveland, Ohio

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES

The following are the present minimum requirements for admission to colleges members of this Association

1 Good English education to be attested by (a) a diploma from a graded high school or literary or scientific college or university, or (b) regents medical student's certificate, or (c) entrance examination covering a four years' high school course including an elementary knowledge of natural history, physics and Latin

2 Graduates from pharmaceutical, dental and veterinary colleges *may be* allowed one year's time on a four year medical course only on condition that they comply with the entrance requirements and pass all examinations and perform all laboratory work embraced in the course of study of the freshman year One years advanced standing *may be* given students with degrees from a recognized literary college

3 The course of instruction shall consist of a four year graded course or its equivalent, as herein prescribed, including four sessions of seven months each in four different calendar years

The following colleges are members of this Association

American Medical College St Louis Mo, Bennett College of Eclectic Medicine and Surgery Chicago Ill California Medical College San Francisco Cal Eclectic Medical College of the City *of* New York, New York N Y Eclectic Medical Institute Cincinnati Ohio, Georgia College of Eclectic Medicine and Surgery Atlanta Ga *Lincoln Medical College* Lincoln Neb, Kansas City Eclectic Medical University Kansas City, Mo

The secretary treasurer is John K Scudder, M D, 1009 Plum Street, Cincinnati, Ohio

FOREIGN MEDICAL SCHOOLS

ARGENTINE REPUBLIC

Buenos Ayres—Universiddd Nacional de Buenos Aires
Cordova—Universidad Nacional

AUSTRALIA

Adelaide—University of Adelaide
Melbourne—University of Melbourne
Sydney—University of Sydney

AUSTRIA

Gratz, Styria—Kaiserliche Konigliche Karl Franzens Universität
Innsbruck, Tyrol—Kais König Leopold Franzens Universität
Krakow, Galicia—Uniwersytet Jagiellonski w Krakowie
Lemberg Galicia—C K Uniwersytet Imienia Cesarza Franciska I
Prague, Bohemia—K K Deutsche Karl Ferdinand Universität
Prague Bohemia—C K Ceská Universita Karlo Ferdinandova
Vienna, Nether Austria—Kaiserliche Königliche Universität

BELGIUM

Brussels—Université Libre de Bruxelles
Ghent—Université d l Etat de Gand
Liege—Université de Liège
Louvain—Université Catholique

BRAZIL

Rio de Janeiro—Faculdade de Medicine, Cirurgia e Pharmacia

CANADA

Halifax, Nova Scotia—Dalhousie University (including Halifax College)
Kingston, Ontario—Queen s University
London, Ontario—Western University
Montreal, Quebec—McGill University
Montreal, Quebec—Université Laval
Quebec, Quebec—Université Laval
Toronto, Ontario—University of Toronto (including the Ontario Medical College for Women, Trinity Medical College and Victoria College)
Winnipeg Manitoba—University of Manitoba (Manitoba Medical College)

CHILE

Santiago—Universidad de Chile

CHINA

Pekin—North China Union Medical College

CUBA

Havana—Universidad de la Habana

DENMARK

Copenhagen—Kjobenhavns Universitet

EGYPT

Cairo—Kasr il Aini (School of Medicine)

ENGLAND

Birmingham—University of Birmingham
Bristol—University College
Cambridge—University of Cambridge
Durham—Durham University (Durham College of Medicine)
Leeds—University of Leeds
Liverpool—University of Liverpool
London—University of London (including the following Medical Schools) *a* St Bartholomew s Hospital, *b* Charing Cross Hospital, *c* St George s Hospital *d* Guy s Hospital *e* King's College, *f* London Hospital *g* St Mary s *Hospital* *h* Middlesex *Hospital* *i* St Thomas s Hospital *j* University College, *k* Westminster Hospital, and *l* London (Royal Free Hospital) School of Medicine for Women

Manchester—Victoria University (Owen s College founded in 1851, was merged in Victoria University in 1905)
Oxford—University of Oxford.
Sheffield—University of Sheffield.

FRANCE

Faculties of Medicine (to the degree of doctor in medicine including the five required examinations)
Bordeaux—Université de Bordeaux
Lille—Université de Lille
Lyons—Université de Lyon
Montpelier—Université de Montpelier
Nancy—Université de Nancy
Paris—Université de Paris
Toulouse—Université de Toulouse
Preparatory Schools of Medicine—Graduates of the 16 following schools are allowed to take the first two examinations if they are presided over by some member of a medical faculty
(a) "*Full Exercise*" or complete course (covering the work of 16 inscriptions)
Algiers (*Africa*)—Académie d Alger
Marseilles—Université d Aix Marseille
Nantes—Ecole de Plein Exercice de Médicine et de Pharmacie (part of the University of Rennes)
Rennes—Université de Rennes
(b) *Reorganized Schools*—(Completing 12 inscriptions)
Amiens—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Lille)
Angers—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Rennes)
Besancon—Université de Besançon
Caen—Université de Caen
Clermont—Université de Clermont
Dijon—Université de Dijon
Grenoble—Université de Grenoble
Limoges—Ecole de Médicine et de Pharmacie (part of the University of Poitiers)
Poitiers—Université de Poitiers
Reims—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Paris)
Rouen—Ecole de Médicine et de Pharmacie (part of the University of Caen)
Tours—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Poitiers)

GERMANY

Berlin, Prussia—Königliche Friedrich Wilhelm Universität
Bonn Prussia—Rheinische Friedrich Wilhelms Universität
Breslau Prussia—Königliche Universität.
Erlangen Bavaria—Königl Friedrich Alexanders Universität
Freiberg Baden—Grossherzogliche Badische Albert Ludwigs Universität
Giessen Hesse—Grossherzogliche Hessische Ludwigs Universität.
Gottingen, Prussia—Königliche Georg August Universität.
Griefswald, Prussia—Königliche Universität.
Halle Prussia—Vereinigte Friedrichs Universität Halle-Wittenberg
Heidelberg, Baden—Grossherzogliche Ruprecht Karls Universität.
Jena Thuringia—Grossherzogliche und Herzogliche Sächsische Gesamt Universität.
Kiel Prussia—Königliche Christian Albrechts Universität
Konigsberg Prussia—Königliche Albertus Universität.
Leipzig Saxony—Universität.
Marburg Prussia—Universität
Munich Bavaria—Königliche Bayr Ludwig Maximilians-Universität.
Rostock Mecklenberg—Universität.
Strassburg Alsace Lorraine.—Kaiser Wilhelms Universität.
Tübingen Wurtemberg—Königliche Eberhard Karls-Universität.
Würzburg Bavaria—Königliche Julius-Maximilians Universität

GREECE

Athens—*Τὸ ἐνμή Ἀθήναις ἐθνικὸν Πανεπιστήμιον* (National University)

HUNGARY

Budapest—Budapesti Királyi Magyar Tudomány Egyetem (Royal Hungarian University)
Klausenburg—Kolozsvári Magyar Királyi Ferencz Jozsef Tudomány Egyetem (Royal Hungarian Franz Joseph University)

ICELAND

Reykjavik—Loeknaskoli (School of Physicians)

INDIA

Bombay—University of Bombay (Grant Medical College)
Calcutta—University of Calcutta (Medical College of Bengal)
Lahore—Panjab University (Lahore Medical College)
Madras—University of Madras (Madras Medical College)

IRELAND

Dublin—Royal University of Ireland (including Queen s College Belfast Queen s College Cork Queen s College Galway)
Dublin—University of Dublin (The School of Physic in Ireland, Trinity College)
Dublin—Catholic University Medical School
Dublin—Royal College of Surgeons, Schools of Surgery (including the Carmichael College of Medicine and the Ledwich School of Medicine)

ITALY

Bologna—Regia Università degli Studi
Cagliari, Sardinia—Università degli Studi
Camerino—Libera Università degli Studi
Catania—Regia Università degli Studi di Catania
Ferrara—Libera Università degli studi di Ferrara
Genoa—Regia Università degli Studi
Messina—Regia Università degli Studi
Modena—Regia Università degli Studi
Naples—Regia Università degli Studi
Padua—Regia Università degli Studi
Palermo—Regia Università degli Studi
Parma—Regia Università degli Studi
Pavia—Regia Università degli Studi
Perugia—Università Libra degli Studi
Pisa—Regia Università degli Studi
Rome—Regia Università degli Studi
Sassari—Regia Università degli Studi
Siena—Regia Università degli Studi
Turin—Regia Università degli Studi

JAPAN

Kyoto—Imperial University (part of medical school is located at Fukuoka)
Tokyo—Imperial University (Tokio Medical College became Medical Department in 1877)
Medical schools are located also at Chiba Sendai Okayama, Kanazawa and Nagasaki

MEXICO

Mexico—Instituto Medico Nacional

NETHERLANDS

Amsterdam—Universiteit van Amsterdam
Groningen—Rijks Universiteit te Groningen
Leyden—Rijks-Universiteit
Utrecht—Rijks Universiteit

NEW ZEALAND

Wellington—University of New Zealand (affiliated with the University of Cambridge England)

NORWAY

Christiania—Kongelige Frederiks Universitet

PERU

Lima—Universidad Mayor de San Marcos

PORTUGAL

Coimbra—Universidade de Coimbra
Lisbon—Escola Medico-Cirurgica.

ROUMANIA

Bukharest—Universitatea din Bucuresti
Jassy—Universitatea din Jasi

RUSSIA

Helsingfors Finland—Kejserliga Alexanders Universitet.
Jurjev (*formerly Dorpat*)—Imperatorskij Jurjevskij Universitet.
Kazan—Imperatorskij Kasanskij Universitet
Kharkof—Imperatorskij Charkovskij Universitet
Kief—Imperatorskij Universitet Sv Vladimira.
Moscow—Imperatorskij Moskovskij Universitet.
Odessa—Imperatorskij Novorossijskij Universitet
St Petersburg—Imperatorskij St. Petersbergskij Universitet Including Vojenno Medicinskaja Akademija (Military Medical Academy) and Zenskij Medicinskij Institut (Medical High School for Women)
Warsaw—Imperatorskij Varsavskij Universitet

SCOTLAND

Aberdeen—University of Aberdeen
Dundee—University of St Andrews (University College)
Edinburgh—University of Edinburgh
Edinburgh—School of Medicine of the Royal Colleges.
Edinburgh—Surgeons Hall School
Edinburgh—Medical College for Women
Glasgow—University of Glasgow (including Queen Margaret College)
Glasgow—Anderson s College Medical School
Glasgow—St. Mungo s College and Glasgow Royal Infirmary
Glasgow—Western Medical School

SIBERIA.

Tomsk—Tomskij Universitet

SPAIN

Barcelona—Universidad de Barcelona
Granada—Universidad de Granada
Madrid—Universidad de Central de Espana
Santiago—Universidad.

Saragossa—Universidad
Seville—Universidad de Sevilla (To this university also belongs the Medical Faculty at Cadiz)
Valencia—Universidad Literaria
Valladolid—Universidad

SWEDEN

Lund—Kungl Karolinska Universitetet
Stockholm—Karolinska Institutet (Medico Chirurgical Institute) (This institute has the same chancellor as the universities at Lund and Upsala, and is guided by a similar constitution)
Upsala—Kungl Universitetet i Upsala

SWITZERLAND

Basel—Universität
Berne—Kantonale Universität
Geneva—Université de Genève
Lausanna—Université
Zurich—Universität.

SYRIA

Beirut—Syrian Protestant College
Beirut—Université Saint Joseph de Beyrouth

URUGUAY

Montevideo—Universidad

WALES

Cardiff—University of Wales (Cardiff School of Medicine)

SUPERVISION OF EDUCATION IN NEW YORK.

The Educational Department of New York is the result of an evolution which has been in progress in that state for 123 years, the corporation known as the "Regents of the University of the State of New York" having been established in May 1784 The first board had about 30 members, this number being increased to 64 by the amendment of November 1784 This body was soon discovered to be too large to be effective so in November, 1787, following the recommendations of a special committee of which Alexander Hamilton and Ezra L'Hommedieu were members, a new act was passed reducing the number of regents to 21, including the governor and lieutenant governor Each member of the board was to serve without compensation, and the term of office was practically a life tenure This act remained unchanged, except in so far as the jurisdiction of the university was enlarged, until in 1904, when the present law was enacted, reducing the number of regents to 11, with tenures of 11 years each

The power of the university was at first to charter colleges and to incorporate academies and to supervise them, being required to visit and inspect them regularly and to make annual reports to the legislature They were also authorized to confer degrees above that of master of arts The field of work later included not only academies, colleges, professional and technical schools, but also libraries, museums, study clubs, extension teaching and similar agencies for home education Supervision of common and normal schools was in the hands of a superintendent of common schools till 1821, when it was transferred to the secretary of state, and in 1854 again transferred to a state superintendent of public instruction, this office continuing until the unification law of 1904 transferred the duties to the commissioner of education under the Board of Regents This act abolished the offices of the superintendent of public instruction and the secretary of the Board of Regents and placed the supervision of all educational matters in the hands of the Board of Regents

At the present time, therefore, the supervision of all departments of education in New York is given to the Regents of the University of the State of New York, a body practically free from politics, and consisting of 11 members, one of which is elected by the legislature each year for a term of 11 years The intention is to have each judicial district represented on the board so far as possible

The powers of the Board of Regents have been gradually extended until at the present time they are as follows "1 To grant charters to any institution, or society, for the promotion of science, literature, art, history or other departments of knowledge These charters may be absolute, or limited by such restrictions as the board may see fit to impose, conversely the board may annul a charter for sufficient reason 2 To confer degrees and govern their issuance within the state The regents not only confer degrees directly, but fix by ordinance the conditions under which they may or may not be granted by colleges and universities The abuse, purchase, or illegal use of degrees and diplomas is rigidly prosecuted under severe provisions of the penal code 3 To inspect, visit and examine every higher educational institution of the state and to require of each a verified annual report 4 To register domestic and foreign institutions in terms of New York standards and to fix the value of degrees, diplomas and certificates from all parts of the world presented for entrance to schools colleges and the professions 5 To establish pedagogic and extension courses leading to a degree or certain license to teach 6 To supervise the entrance requirements to the profession of medicine, law, dentistry, pharmacy, veterinary medicine, and the certification of nurses and of public accountants

Medicine—The regents have full control of the practice of medicine They pass on credentials for admission to medical colleges, conduct entrance examinations and issue medical student certificates A four year high school education is required for admission to the medical study For the examination for license to practice medicine the question papers are prepared and the answers rated by the State Board of Medical Examiners, but the question papers are revised, edited and printed by the regents, who also conduct the examinations and issue the licenses The regents have the power to revoke a license for cause A classified list of medical schools is kept, showing which are accredited and which not The members of the board of medical examiners are appointed by the regents from the licensed physicians of the state and any member of the board may be removed for misconduct, incapacity or neglect of duty The secretary of the board of examiners is not a member of the board, but must be a licensed physician He is appointed by and serves during the pleasure of the regents

Law—The regents are responsible only for the preliminary education of law students the examination for entrance to the bar being conducted by the State Board of Law Examiners The requirement for admission to the study of law is three years of high school work

Dentistry—The regents issue certificates for admission to dental schools and licenses to practice dentistry A four year high school course is required for admission, and the course of study in dentistry covers three years

Pharmacy—The regents are responsible only for the preliminary education of pharmacy students, which is one year of high school work The course in pharmacy is two years, the license examination being given by the State Board of Pharmacy

Veterinary Medicine—The preliminary requirement for entrance to a New York veterinary college is a four year high school education The course of study in a veterinary college is of three years' duration The regents issue entrance certificates and conduct the licensing examination, the answers being rated by the State Board of Veterinary Examiners

Nurse Registration—For registration the nurse must hold a diploma from a nurses' training school, maintaining a course of at least two years and registered by the regents as maintaining proper standards, and subsequent to graduation must pass a licensing examination as determined jointly by the regents and the State Board of Nurse Examiners

Certified Public Accountants—Four years of high school work and three years of satisfactory experience in accounting, one of which must have been spent in the office of an expert public acountant, is required by the regents for a certificate as a certified public accountant

The board also exercises legislative functions concerning all educational policies, those bearing on the elementary and secondary schools as well as those affecting the higher institutions There already exists an elaborate system of educational laws, decisions and settled usages resulting from a century of experience and the gradual evolution of public sentiment The board also gives direction concerning the management of state libraries and museums

The commissioner of education, the executive officer of the Board of Regents, was elected by the legislature for a term of six years At the expiration of this term of office the regents are empowered to appoint his successor to serve during their pleasure Among other officials which are appointed on the nomination of the commissioner of education and the approval of the Board of Regents, are three assistant commissioners, a secretary to the commissioner and a secretary to the board of medical examiners

The work of the education department is assigned to several divisions, as follows

Accounts Division—This division has charge of department finances, looks after necessary appropriations, receives and accounts for all fees, keeps account of all expenses of the department and of normal school, training class, institute and Indian school expenses The employés of this division, four in number, are all under bond for the proper discharge of their duties

Attendance Division—This division looks after the enforcement of the compulsory education laws which have been brought into conformity with the child labor laws, and there is cordial cooperation between the officials charged with the execution of both This division also cooperates with boards of education superintendents, school commissioners and trustees in all parts of the state in the enforcement of proper attendance at the public schools There are three employés in this division

Examinations Division—This division, as its name indicates, has supervision of the examinations of pupils in the schools, of teachers' examinations, examinations for entrance to normal and professional schools, and examinations for those who wish to become certified public accountants or registered nurses For these examinations the division prepares the question papers marks and records the answers and certifies the results This division has also the administration of examinations for license to practice medicine, dentistry or veterinary medicine, and for the titles of registered nurses and certified public accountants In these subjects, however, the questions are prepared and the answers rated by the boards of examiners appointed by the regents, but the question papers are revised, edited and printed in the education department The examinations are conducted and the licenses and certificates are issued by the examination division The registering and accrediting of schools and the passing on credentials from educational institutions at home or abroad is also assigned to this division There are 64 employés in this division

Inspections Division—This division inspects schools of all grades colleges, technical and professional schools, normal schools, training classes, high schools, academies and common schools wherever practicable The work of this division specially demands competency and good judgment on the part of those engaged in it The division has 17 employés

Law Division—This division is responsible for advice regarding the meaning and proper construction of the educational laws It answers inquiries has charge of contested appeals and prepares cases for argument before the commissioner of education when oral argument is desired The form and legality of charters issued by the Board of Regents as well as the form and effect of educational bills appearing in the legislature are looked after by this division Litigation and legal proceedings in the courts are also attended to with the aid of the attorney general's office The division has two employés

Records Division—This division gathers and keeps all records bearing on the educational history of the state Files are kept containing letters written or received by the department on educational matters as well as of publications, from whatever source, which will aid the future student of the state or national educational history These files are kept for ready reference, being later transferred to the state library There are five employés in this division.

Statistics Division—This division which has six employés, gathers, tabulates and aids in the interpretation of educational data

Division of Libraries and Home Education—This division has charge of the New York State Library, which was placed in charge of the regents in 1889 and made an integral part of the university The term "home education" comprehends the entire group of agencies immediately administered by the library division, which promotes the higher education of adults at home as distinguished from the work done by the regular teaching institutions It includes traveling libraries, public libraries a library school, extension lectures and teaching, study clubs and exchanges There are 126 employés in this division

Division of Science—This division includes all the scientific interests of the department, such as scientific investigations maintained by state aid, economic and industrial applications of science and the state museum The staff includes the work of the state geologist and paleontologist, the state botanist and the state entomologist as well as mineralogist, a zoologist and an archaeologist This division has 24 employés

The enormity of the work being done by the education department of New York as well as the great value to education generally can best be appreciated when we consider the personnel of those serving in the department from the beginning The Board of Regents has had among its members the most eminent educators of the state, many being of national and even of international repute Mere mention of the names of George Clinton, Alexander Hamilton, John Jay, Philip Schuyler, George William Curtis and Whitelaw Reid at once bespeaks the high dignity of the University of the State of New York The present commissioner of education, Andrew S Draper, was himself formerly state superintendent of public instruction, then a member of the Board of Regents and then president of the University of Illinois The assistant commissioners as well as the chiefs of divisions have come to be recognized as experts in their particular fields and are prominent figures in the educational activity of the United States The character of those constituting the Board of Regents explains why their work has been so well appreciated by the New York legislature and why so many responsibilities have been placed on them Among the factors working for high standards of education in the United States, the University of the State of New York will continue to hold a prominent place

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COLLEGE NOTES

Colleges Merged.—Four colleges merged into two during the present year At Louisville, Ky the University of Louisville merged with the Kentucky University Medical Department, retaining the former name, while at Columbus, Ohio, the Ohio Medical University and the Starling Medical College merged, taking the name of the Starling Ohio Medical College Barnes Medical College, St Louis, has transferred its entire property unencumbered and free from any restrictions, to the University of Missouri, complete possession of the property to be given in September, 1908

Mergers with Colleges of Arts.—During the past year several important mergers between medical colleges and colleges of liberal arts have taken place The Medical College of Alabama became the Medical Department of the University of Alabama——Denver Homeopathic College has become the College of Medicine of Westminster University——Sioux City College of Medicine has formed a close affiliation with Morning Side College.——Milwaukee Medical College is now the Medical Department of Marquette University

Colleges Closed.—Two colleges were closed during the past year, the California Medical College (Eclectic), San Francisco, and the Grand Rapids Medical College Grand Rapids, Mich

Names Changed.—The American College of Medicine and Surgery, Chicago, has changed its name to the Chicago College of Medicine and Surgery, the Denver Homeopathic College, to the Westminster University School of Medicine, and the Southern Homeopathic Medical College, to the Atlantic Medical College

New Colleges.—Only two new medical colleges have been organized during the past year, or three if we include the one in the Philippine Islands The two in the United States are both night schools, one of which, the Reliance Medical College, is located in Chicago, and the other, the Hippocratean College of Medicine, in St Louis There are two other schools which have not been included in our lists These are the Fordham University College of Medicine, of New York City, and the International Medical Missionary College of Atlanta, Georgia Both of these schools have completed two sessions

Mention should be made also of the University of Wisconsin College of Medicine, which will be organized in time to begin active work this fall, having already received authority from the Wisconsin legislature Two years of the medical course will be taught

Medical Schools with Divided Courses—There are seven medical colleges giving the freshman and sophomore years in one city or place and the junior and senior years elsewhere They are as follows

NAME OF COLLEGE	*1st and 2d yrs at*	*3d and 4th yrs at*
Univ of California, Med Dept	Berkeley	San Francisco
Rush Medical College	Chicago, South Side	Chicago, W Side
Indiana Univ School of Med and the State Coll of P & S	Bloomington	Indianapolis
Univ of Kansas, Sch of Med	Lawrence	Kansas City
Univ of Nebraska Coll of Med	Lincoln	Omaha
Cornell Univ Med College	Ithaca or New York	New York
Univ of North Carolina	Chapel Hill	Raleigh

In 1908 the University of Missouri will give the first two years at Columbia and the last two at St Louis

Medical Schools Teaching Two Years Only—There are seven medical schools which give only the first two years of the medical course These schools are (1) the University of Mississippi, Oxford, Miss, (2) Wake Forest School of Medicine, Wake Forest, N C, (3) University of North Dakota, Medical Department, University, N D, (4) University of Oklahoma, School of Medicine, Norman, Okla, (5) University of Utah, Department of Medicine, Salt Lake City, Utah, (6) University of West Virginia, College of Medicine, Morgantown, W Va, and (7) University of Wisconsin School of Medicine, Madison, Wis

Entrance Requirements of Medical Colleges—There are nine medical schools which already require for admission one or more years of work in a college of liberal arts These colleges and the dates when such requirement began are as follows

COLLEGE.	*No of Years*	*Began*
Johns Hopkins Medical School	Degree	1893
Harvard Medical School	Degree	1900
Western Reserve Univ, Medical Dept	3	1901
Rush Medical College	2	1904
University of California, Med Dept	2	1905
University of North Dakota Med Dept	2	1905
University of Minnesota, Coll of Med	2	1907
University of Minnesota Homeo Dept	2	1907
University of Missouri, Med Dept	1	1906

The twelve following schools have declared their intention to increase their preliminary educational requirement to two years of work in a college of liberal arts, the requirement to begin with the year mentioned in each instance

COLLEGE	*No of Years*	*Begins*
Wake Forest School of Medicine	2	1908
Yale Medical School	2	1909
George Washington University, Med Dept	2	1909
Northwestern University Med School	2	1909
University of Kansas School of Med	2	1909
University of Michigan Med Dept	2	1909
American Medical Missionary College	2	1910
State University of Iowa (R)	2	1910
Drake University Med Dept	2	1910
Sioux City College of Medicine	2	1910
University of Pennsylvania Med Dept	2	1910
University of Utah Med Dept	2	1910

Several other schools have expressed their intention to require two years of university work, but are at present unable to give a definite date when the requirement will begin

Besides the 21 colleges named above 30 others have voted to require, beginning with the session of 1910 or earlier, a year of nine months to be devoted to physics, chemistry, biology and one modern language, in addition to a four year high school education

There are three state examining boards which have adopted a preliminary educational requirement above the usual four year high school education, the board of North Dakota which will require two years of work in a college of liberal arts from graduates of 1910 and thereafter, the board of Minnesota, which will require two years from graduates of 1912 and thereafter, and the board of Connecticut, which will require one year of work in a university from graduates of 1912 and thereafter These requirements have been secured in Minnesota and North Dakota in support of the state university medical schools, which have adopted requirements of similar import

Status of Toronto Colleges—American Medical Directory—Dr A Primrose, secretary of the Faculty of Medicine of the University of Toronto, has called attention to some misstatements regarding Toronto medical colleges in the first edition of the "American Medical Directory" The statement is made in the directory that the present Faculty of Medicine of the University of Toronto was organized in 1844 as the Toronto School of Medicine Dr Primrose says that this is incorrect The Faculty of Medicine of the University of Toronto was organized in 1843 as the Medical Faculty of King's College, became extinct in 1853 and was re established in 1887 The Toronto School of Medicine, which was organized in 1847 and which became extinct in 1887, was an entirely different institution

Reciprocity During 1906—We have just secured complete data, as presented in Table 8 on page 594, showing the total number of physicians licensed through reciprocity during 1906 This table is of much interest, showing that 685 licenses were issued in 1906 to physicians who, without the provision for reciprocity, would have been required to undergo a second exacting test before securing the right to practice in their new locations It is to be hoped that the standards of medical education may be made more uniform and that provision for reciprocity on a fair basis may be provided for by a larger number of states Now about half of the states and territories have made such provision

Physicians in Proportion to the Population—The following table has been prepared from the best available information and shows for each state the number of physicians in proportion to the population As will be seen there is now one physician in this country to every 636 persons Yet these statistics do not include the multitude of osteopaths, neuropaths and other irregulars who are actually practicing medicine in many states This table shows the necessity of requiring that hereafter those who enter the medical profession should represent quality rather than quantity

TABLE 9—PHYSICIANS IN EACH STATE IN PROPORTION TO THE POPULATION

State	Population 1905 estimate	Physicians	Proportion 1 to every	State	Population, 1905 estimate	Physicians	Proportion 1 to every
Alabama	1,986,347	2,255	881	Nebraska	1,068,120	1,782	599
Arizona	*140 270*	238	*589*	*N Hamp*	*429,118*	*630*	*681*
Arkansas	1,403 239	2,478	566	N Jersey	2,103,039	2,412	872
California	1,620,883	4,180	388	N Mexico	212 825	317	671
Colorado	602,925	1 718	351	New York	7,901,754	12,714	622
Connecticut	989,500	1,424	695	N Carolina	2,031,740	1,540	1319
Delaware	192,855	238	810	N Dakota	383,226	532	720
D Colum	302 883	1,174	258	Ohio	4,400,155	7 989	551
Florida	597,102	687	869	Oklahoma	558,261	1,968	284
Georgia	2,405,821	2,952	815	Oregon	461,451	761	606
Idaho	198 382	302	657	Penna	6,824,115	10,476	651
Illinois	*5,319 150*	*10 210*	*521*	Rhode Isl	470,091	781	602
Indiana	2 678,492	5 157	519	S Carolina	1 434,001	1,066	1340
Iowa	2,391,633	3,746	638	S Dakota	428 055	600	713
Kansas	1,582 473	2 557	619	Tennessee	2,147 166	3 130	686
Kentucky	2 291 441	4,016	571	Texas	3,455 300	5,018	689
Louisiana	1,513 145	1,681	899	Utah	309 734	341	908
Maine	711,156	1 196	595	Vermont	349,251	685	510
Maryland	1,260 869	1 932	653	Virginia	1 953 284	2 087	936
M chusetts	3 083,546	5 642	547	Washington	593 538	1 160	516
Michigan	2 577 275	4 351	592	W Virginia	1 056 805	1 493	708
Minnesota	1,971 949	2 092	943	Wisconsin	2,256 897	2 513	897
Mississippi	1,682,105	1 916	878	Wyoming	107,521	186	578
Missouri	3 320 405	6 251	531				
Montana	293,534	359	818	Totals	82 080 001	128 968	636

The figures for the population in Table 9 are taken from the 1905 estimate made by the United States Bureau of Education The figures for the number of physicians include those registered by examining boards during 1906

The ten states having the largest number of physicians in proportion to their population are in their order District of Columbia 1 to 258 Oklahoma 1 to 284 Colorado 1 to 351 California 1 to 388 Vermont, 1 to 510 Washington 1 to 516 Indiana, 1 to 519 Illinois 1 to 521 Missouri 1 to 531 and Ohio 1 to 551

Medical Graduates Holding Baccalaureate Degrees—Reports from the various colleges show that of the 4 980 medical graduates in 1907, 903, or 18 per cent were also graduates from colleges of liberal arts This is of interest when we consider that only two medical colleges Harvard Medical School and Johns Hopkins Medical School, require baccalaureate degrees for admission

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SATURDAY, AUGUST 17, 1907

PSYCHIC CONTAGION OF CRIMINAL IMPULSE

It took the world a long time to come to the idea of the communication of disease by actual contact with those suffering from the disease, or with something that had been so close to them as to carry contagious elements with it. It is very hard to understand at the present time how this precious knowledge, seemingly so obvious, was so long delayed. Practically only one disease—smallpox—was definitely known to be due to actual contagion or to personal contact with a patient or his secretions before the beginning of the nineteenth century. People thought that epidemic disease was due to something in the air, or atmospheric conditions were considered to influence certain natures in such a way as to produce particular diseases in them. When we speak of psychic contagion in our own time, most people are apt to look on the expression as eminently figurative and as containing very little, if any, literal truth. Many things in recent life, however, seem to make it clear that some not far distant generation will be quite as surprised that the men of our time did not recognize the influence of psychic contagion as we are now amazed at the generations which did not recognize physical contagion as a great force for evil.

There are many sources of evidence for the influence of psychic contagion in our day. It has been noted over and over again, and often called to attention to, that one peculiar suicide is nearly always followed by another of the same kind and the second not infrequently by one or more resembling it more or less in various parts of the country. Such a series of incidents has happened too often to be regarded as a mere coincidence. It is evident that the first one has a causative influence in the production of the others, because of the mental suggestion which it carries with it, and because the detailed report of it has led to a mitigation of the abhorrence for such an act, which previously kept the unfortunate victim from taking such a means of ending existence. Besides for certain morbid natures there is the added attraction of the sensation aroused by the unusualness of the method. This is the typical example of psychic contagion, but others are not hard to find, and a series of events that has attracted widespread attention in this country in the last few weeks seems to indicate that such criminal suggestions may be efficacious not only for crimes that concern the individual himself, but also for hideous brutalities which one finds it hard to reconcile with human nature as representative of rationality.

In and around New York there have been a series of assaults on little girls and of strangulations which has sent a thrill of horror through the country. The newspapers generally have spoken of it as a wave of crime. There seems to be no doubt, however, that it deserves the name of an epidemic of crime. There are a number of morbid individuals in all large cities in whom there exist, in a more or less dormant way, impulses to the worst forms of crime. As a rule these impulses are not put into action because of the personal abhorrence of the individual, in spite of his morbid condition, and also for fear of the punishment that will surely be meted out for such a crime. When such people read accounts of crimes of this awful nature, their former temptations become almost obsessions to the commission of them. When they realize further, that the criminals have escaped justice and are not likely to be captured, such an obsession may degenerate into what is practically an uncontrollable impulse if the opportunity presents itself. Psychic epilepsy is not a delusion of the medicolegal expert, but a sad, sure conclusion of the psychiatrist.

It is evident at a glance that the widespread publication of the details of such crimes is eminently injudicious, to use no harsher term. In Chicago a little while ago a girl committed suicide by jumping from the fifteenth story of a tall building, the newspapers gave a sensational account of the affair, with glaring headlines. As was to be expected, the next day another suicide was committed in the same manner. The reading of sensational accounts of such things is likely to be the determining factor which upsets the tottering equilibrium of mentality already entertaining the idea of such crimes, but hesitating between natural abhorrence and fear of punishment. If we would take up seriously the question of moral prophylaxis against the occurrence of these gruesome outrages, we must have some regulations to limit the publication of details of unnatural crime, at least in our daily papers. Another question, of course, concerns the punishment that is likely to be effective in putting a stop to such crimes as the assaults first mentioned when the criminals are caught. The slow ordinary course of justice is likely to have little deterrent effect in such cases, if indeed, because of the long-continued sensational attention which it attracts, it does not add to the temptation. There must be some such striking psychic influence as that which starts the offender on the path of crime.

There is a story told concerning a medieval town in which by psychic contagion a number of young girls in succession committed suicide and the municipal authorities were in despair as to how to put an end to the epidemic. At length an ordinance was passed that the body of the next suicide should be exposed, naked in the market place for some days after the discovery of the crime. According to the story, one more suicide took place, the punishment decreed was inflicted, and the epidemic of suicide came to an end then and there

It seems probable however that our constitutional regulations against cruel or unusual punishments may prevent us from putting into practice any such striking and efficacious remedy for our psychic epidemics of crime as was used in the middle ages but it seems not unlikely that some striking form of punishment, or the immediate infliction of punishment with as little delay as possible, would counteract the criminal tendencies in such cases These problems are, after all, much more distinctly in the province of the physician who appreciates the morbid side of criminality than in those of the jurist or the legislator

THE PHENOMENON OF HYPERSUSCEPTIBILITY

Reference has previously been made to the phenomenon of hypersusceptibility as pointed out by Rosenau and Anderson of the United States Public Health and Marine-Hospital Service[1]

They showed by a series of brilliant experiments[2] that, while horse serum is apparently a bland and harmless substance when injected into guinea-pigs it renders the animal susceptible to a subsequent injection, and that if the latter is given after an interval of ten days the hypersusceptibility invariably manifests itself by severe symptoms which often result in the death of the animal They believe that this phenomenon has a deep significance in relation to the problem of immunity, and expressed the opinion that resistance to disease may be gained largely through a process of hypersusceptibility

These observations have attracted much attention and, in the main, have been confirmed by a number of other observers during the past year

Just issued from the Hygienic Laboratory is a further important report[3] of experimental studies in which it is shown that this phenomenon may be induced by any of the higher forms of albuminous substances, no matter from what source

In addition to horse serum Rosenau and Anderson used proteid substances from varying sources, such as blood serums from other animals hemoglobin, egg albumin milk extract of peas and extracts of various bacteria

On the other hand the lower forms of nitrogenous compounds such as leucin and tyrosin appear to have no sensitizing properties and this fact may be of use in physiologic chemistry to determine definitely between simple nitrogenous compounds and the proteid molecule

The sensitizing agent and its mode of action are as yet unknown, but it is shown that it is not influenced by cold or formaldehyd It is also shown that the toxic principle is not altered by various ferments such as taka-diastase pancreatin, rennin myrosin invertin, emulsin pepsin ingluvin malt and papain nor by certain alkaloids such as atropin strychnin morphin or caffein, nor is it altered by calcium chlorid sodium nitrate, sodium chlorid, magnesium sulphate or ammonium sulphate

Certain it is that profound physiologic changes are induced by the first injection of a strange proteid, and, by using certain bacterial proteids Rosenau and Anderson also observed an immunity following the second spaced injection Hypersusceptibility was easily induced in guinea-pigs by proteid extracts obtained from the hay, tubercle, anthrax, colon and typhoid bacilli and in the case of the two latter organisms the hypersusceptibility produced was followed by a definite immunity to the corresponding infections This was especially noticeable in the reaction induced by using the colon extracts Ten days following the second injection of the extract the guinea-pigs were given 5 c c of a heavy emulsion of colon bacillus from 24-hour old cultures, but showed no symptoms Three controls received the same injection and died in twelve hours

These results seem to indicate that the phenomenon of hypersusceptibility has a definite bearing on the prevention and cure of certain infectious processes and should lead to further earnest study in the hope that results of practical importance may be attained

THE VALUE OF ANTITOXIN IN TETANUS PROPHYLAXIS

In this country tetanus antitoxin has given such successful results in preventing the development of tetanus after Fourth of July injuries that it has acquired the reputation of being almost a positive preventive of tetanus There are too many possible sources of failure in the application of any therapeutic measure to expect invariable success, and hence it is to be expected that occasional instances will be reported in which antitoxin prophylaxis of tetanus has failed, even as it sometimes fails in diphtheria A fairly careful scrutiny of the American literature for the past five years has not brought to light a single report of the development of tetanus in a person who had received a timely prophylactic dose of tetanus antitoxin In European literature, however, a considerable number of such cases are now recorded and on account of their bearing on the real value of prophylactic injections of tetanus antitoxin they are entitled to careful analysis

At the end of 1906 Suter[1] was able to collect from the literature reports of twenty-two cases of unsuccessful prophylactic use of tetanus antitoxin and we have since observed reports of still two other cases[2] Analysis of these reports shows, in the greater number of instances, evident reasons why the antitoxin was ineffective In

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[1] The Journal A M A, June 2, 1906

[2] Public Health and Marine Hospital Service, Hygienic Laboratory Bulletin, No 29

[3] Public Health and Marine-Hospital Service, Hygienic Laboratory Bulletin No 36

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[1] Beitr z klin Chir, 1907 lii, 694

[2] Terrier and Mercade Revue de Chir, 1907, xxvii No 1

in a few there was too long an interval between the time of infection and the time of injection of antitoxin, in a few there was evidence that the antitoxin was inactive, a few others followed dusting of the wound with dry antitoxin powder a method which is highly unreliable because of the uncertainty of its absorption from wounds in all possible conditions of infection, and in one case tetanus did not appear until forty-seven days after the accident and thirty-nine days after the antitoxin injection, when the immunity had presumably disappeared or greatly diminished Consequently in but a very few of the reported cases has there been an obvious failure of the antitoxin to accomplish the expected immunization If on the other side we set the many thousands of cases in which tetanus antitoxin has been used prophylactically with apparent success, we find the actual number of failures to be surprisingly small For example, in Geneva in one clinic 700 prophylactic injections have been given with but one mild case of tetanus, and many other hospitals and clinics report each several scores or hundreds of patients prophylactically treated without a single case of tetanus Of course it is impossible to estimate the exact value of prophylactic measures in tetanus, since we can never tell just how large a proportion of our patients with suspicious wounds would develop tetanus, but it is noticeable that many of the most noted European surgeons are earnest advocates of antitoxin prophylaxis in all lacerated and dirt-contaminated wounds Kocher in the German Surgical Society congress stated that he would consider any physician entitled to a reproof who failed to use this measure in a case of injury with contamination of the wound by street dirt

Whether the apparent lack of failures in tetanus prophylaxis in this country depends on the neglect of physicians to report them, or is a real condition depending perhaps on a uniformly active antitoxin, we can not say It is noticeable that a large proportion of the reported failures were in France, and in the twenty-four collected, Pasteur serum had been used in thirteen, Behring serum in six and Tizzoni serum in two It is quite probable, however, that much of this preponderance of French cases depends on the more widespread use of antitoxin prophylaxis in France than in other countries Even the German serum, which is known to be uniformly standardized has a few failures charged against it, but there is always the possibility that any preparation of antitoxin may become deteriorated after standardization through improper storage or other causes It should be added, however that the serum used in the twenty-four cases mentioned was apparently not always inactive, for many of the patients—about two-thirds—recovered Of the six patients treated with the German serum but one died while seven of the thirteen French cases were fatal Hence, even unsuccessful antitoxin prophylaxis with antitoxin increases the chances of recovery in those cases in which tetanus appears

PUBLIC OPINION AND MEDICAL REFORM

The public holds the medical profession responsible for any abuses which occur in connection with medical institutions and in medical affairs This is as it should be, since medical men alone are in position to recognize such abuses and to suggest the steps necessary for their correction If the facts about any worthy reform are plainly stated and it is made clear that the reform asked for is for the benefit of the public and not merely for the selfish interests of the medical profession, the public, through the public press, can usually be counted on for strong support and it will join the profession in demanding that reform That this is true the medical profession has been slow to recognize

The above statements are well supported in the extensive publicity given by the press to a statement issued by the Council on Medical Education some weeks ago regarding medical education in the United States The statement referred to was sent out to correct a number of erroneous articles or misinterpretations which appeared following the educational conference last April and which were based on assertions not authorized by the council nor found in the stenographic report of the conference For instance, the press reported that "3,000 of every 4,000 medical graduates are incompetent," etc, which was probably a misinterpretation of the statement that, as a result of an inspection of medical colleges by the council, only about 50 per cent were found to be properly equipped, 30 per cent needed to make considerable improvement, while 20 per cent of the colleges were unworthy of recognition The statement which was issued to the press by the council contained many of the facts given in the report to the House of Delegates at Atlantic City last June, as well as a strong appeal for two things endowments for medical colleges and better state control of medical licensure Many newspapers not only published the statement entire, but added strong editorial comments

The *Gazette,* Trenton, N J, emphasizes the importance of a proper medical training as well as the dependence of the laity on the profession for the exposure of frauds in medical institutions It says

> While the choice of a physician is often a mere matter of accident, it is the right of the patient to know that the man in whose hands he places his life has had the advantages of the best training the country affords For that reason the American Medical Association should go a step farther In a matter of so much importance merciless exposure is probably the best that can be applied to a fraud

The same points are emphasized in an editorial by the Wilkes-Barre, Pa, *Record,* which also expresses appreciation of the work being done Says the *Record*

> The science of medicine is so intimately associated with questions that relate to life and death, and the happiness and prosperity of the human family, that the highest qualifications and preparation should be demanded of the practitioner Considering all that is to be learned, it has seemed a very loose appreciation of the responsibilities of practice to permit a boy of meager preliminary educa-

tion, perhaps not even that of a high school, to spend a few years in one of the many for revenue only medical schools and then take charge of a patient whose life depends on the skill and ability of the physician It is very evident that the American Medical Association has begun a timely and much needed agitation

The certainty of a strong public demand as an aid in securing better medical standards is shown in the following extract from the Omaha *Bee*

> Reform that comes from the inside is usually effective and lasting and for that reason the medicine taking public will find cause for encouragement and congratulations in the effort being made by the American Medical Association, an organization representing the best in modern medical service, to improve the condition of medical education in the United States The day of the cheap doctor, who learns by experiment on helpless victims what he should have learned by study, is rapidly passing Graduates of medical colleges are very generally required to be worthy of their titles Nevertheless, it is a significant sign that the demand for better service and better equipment in modern medical practice should be emphasized by the American Medical Association

The Chicago *Record-Herald* puts its finger on the worst flaw in medical education to-day when it refers to low standards of preliminary education

> Many have felt that the real trouble lies in the extremely inadequate "preparation" of many, if not most, of the medical students The medical training may be good, but if the entrance examinations are perfunctory the students may be utterly incapable of profiting by it The final examinations and the state tests are notoriously inconclusive, as they involve a certain amount of "cramming" and little else

The Milwaukee *Sentinel* refers to what the physician should be and what the public rightfully expects him to be

> The physician above all others is the man whose education should be broad and complete To him are intrusted the lives of his fellow men, and half baked youngsters without preliminary mental training should not be permitted to travesty so serious a profession The movement started by the association for an improvement of the standard of American medical schools should be encouraged

The necessity of educating the public not only for the btaining of good laws but in order to guarantee their nforcement and also the fact that this education must ome from the medical profession are brought out by he *Evening Standard,* New Bedford, Mass

> At the basis of good laws, well enforced, there must necessarily be an alert and intelligent public opinion and such an opinion would be as efficacious in weeding out the incompetents as ever the laws could be We think the doctors ought to remember that, and so be aggressive leaders in the creation of such public opinion Somewhere there is a point where people have got to take care of themselves and an intelligent public opinion is one of the surest means to that end We think the doctors have a great field in this direction

That public sentiment for medical reforms must be created by the medical profession itself is emphasized by the Hoboken, N J, *Observer*

> A state never advances beyond the point demanded by the majority of its citizens It does not come within its functions to initiate reforms affecting the people as a whole, or any profession as a class Reforms must spring from the people, and advances in a profession must be made by the predominant sentiment in that profession

The above newspaper comments are only a few of numerous similar statements made from which several pages could easily be filled Enough has been quoted, however, to show how the public view these matters As suggested by the above comments, the laity looks to the medical profession to bring about better standards of medical education It is as much the duty of the medical profession to demand laws protecting the public from the ignorant and poorly prepared physicians being turned out each year by the number of low-grade institutions which are parading as medical colleges as it is for them to decry the adulteration of foods and the designs of advertising quacks To fulfill that duty requires that a public demand be created for laws which will ensure the adoption and enforcement of higher standards The legislators who enact our laws are usually willing to listen to public demands In working for any needed reforms, therefore, it is wise to secure the cooperation of the public

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CONTROL OF MEDICAL EDUCATION IN NEW YORK

Elsewhere in this issue (page 598) will be found an article describing the supervision of education in New York This is of general interest since it gives a clear, concise statement regarding the University of the State of New York and the Board of Regents It is of more particular interest, however, because it shows that the control of medical education and of medical licensure can be provided for on a non-political basis The Board of Regents has eleven members, one of whom is elected each year by the state legislature to serve for a term of eleven years The board has charge of all educational matters, including medical and other professional schools, with the result that medical education and licensure in New York are carefully looked after The regents have the right to charter medical colleges, to inspect them and to revoke the charters for cause They inspect the credentials of prospective medical students, conduct preliminary examinations and issue medical students' entrance certificates, without which students can not enter the medical colleges of New York Incidentally, it is to be regretted that the standard of entrance requirement to medical colleges is simply a high school course, probably, however, the regents will soon raise these requirements to agree with those of other states which have secured a requirement of one or two years' work in a college of arts

The regents not only fix the standards for preliminary and medical education, but also conduct the examinations for license to practice medicine in the state The Board of Medical Examiners furnishes the questions and grades the answers, but the question papers are edited and revised by the regents and the record of grades is kept by them The nine members of the Board of Medical Examiners are appointed by the regents and any member can be removed by them for misconduct incapacity or neglect of duty The secretary to the Board of Medical Examiners, although a licensed physician, is not a member of the board and holds his position during the pleasure of the regents. Thus complete control is placed in the hands of the regents.

The regents have heretofore lacked the proper authority to prosecute violations of the medical practice act, but the new law apparently supplies this authority. The practice act, however, does not seem to provide the machinery to enforce its provisions; this, if we understand the new law, being left to the state and county medical societies. The prosecution of individuals practicing medicine without a license and of those guilty of malpractice should be kept in the hands of the regents who are otherwise responsible for the enforcement of the medical practice act. Since the authority to prosecute violations has been furnished, however, it is probable that the means for the enforcement of the practice act may also be developed.

New York is certainly to be congratulated on its nonpolitical system of control over all departments of education, a system that is well worth careful study on the part of all who are interested in state control of medical education and medical licensure.

STATE BOARD EXAMINATIONS AND MEDICAL EDUCATION

Besides ascertaining the fitness of the candidates to practice medicine, state board examinations can also furnish a most effective stimulus to the improvement of medical education. A poor medical school would soon be forced to alter its instructions if any considerable proportion of its recent graduates should take low standing in state board examinations. To be effective, however, these examinations must be such as to differentiate sharply between the real, effective, assimilated knowledge, which can be acquired only by first-hand acquaintance with the subjects in clinic and laboratory, and the superficial, ill-understood, pseudo-knowledge procurable by memorizing quiz compends.

It is a notorious fact that a few medical schools are conducted altogether too much on this latter plan. If the examinations are also framed on the quiz-compend model, it follows that graduates of such schools will take equal or perhaps even higher standing than the graduates of schools which insist on thoroughness. This is a statement of fact supported by the small percentage of failures at state board examinations by graduates of some schools known to be little better than quiz classes. Indeed one might never have seen the inside of a medical college or hospital, never made a dissection or looked through a microscope, in a word, know nothing worth knowing about medicine and pass a very creditable compend-examination. Such examinations will demonstrate nothing but the candidate's capacity for cramming, certainly not his fitness to practice medicine. There can be no question that the licensing examination should be framed so as to distinguish between assimilated knowledge and that secured by cramming.

In addition to the usual oral and written examination, there should be a practical portion. Hospitals have long since been combining the practical with the theoretical examination in the selection of internes. In the regular licensing examinations in Europe, practical examinations are required, in addition to oral and written tests. In France practical tests are required in dissection, pathology, operative surgery, regional anatomy and midwifery, while in Germany practical tests are required in medicine, surgery, ophthalmology, pediatrics and nervous diseases, these tests sometimes covering as much as two or three weeks in time. Practical tests are, therefore, not a matter of experiment.

Possibly the division of the licensing examination into two or more parts, thereby allowing of more time to the subjects, would be beneficial. In Great Britain, as is well known, there are four separate examinations and in France five. At least three states, Maryland, Michigan and Indiana, allow their examinations to be taken in two parts, students at the end of their sophomore year being permitted to take examinations in the subjects contained in the first two years of the medical course, leaving the other required branches to be taken after graduation when the applicant comes up for his licensing examination.

MEDICAL EDUCATION IN THE UNITED STATES

This number contains statistics bearing on medical education in the United States for the year ending June 30, 1907. The information was obtained direct from the medical colleges, from the annual announcements, from personal information and from other sources. It is through the kind courtesy and cooperation of the officers of the various medical colleges that we are able to present these complete statistics. Our thanks are due to the colleges for reports the preparation of which has required much time and thought.

Decided advances in medical education have been made during the past year. A large amount of money has been secured for medical education and many new buildings, laboratories and hospitals have been built which have added materially to the facilities for the better training of students in medicine. The desire for higher standards has been manifested in all sections of the country. During the year some forty colleges have voluntarily raised the standard of entrance requirements above that of a four-year high school education, and three state examining boards have taken similar action.

On the other hand, there are a few things to regret. By this time it is certainly recognized that modern medicine can not be taught in the few brief hours from 7 to 10 o'clock at night to students already tired from their day's work, without mentioning the impossibility of providing clinical courses during those hours or the unsurmountable difficulties associated with the conduct teaching of students where the underlying principles should always be kept in view and their intelligent application in detail carefully taught The student, taught by the powerful example of great clinicians whom he sees daily using ready-made formulas, is in great danger of letting his lessons in pharmacology lapse into innocuous desuetude and of going into practice ready to exchange the ready-made formula of the dispensary or the clinic for the ever ready specific of the proprietary medicine man

SNOBBERY IN FLAT OWNERS

Some years ago there appeared some correspondence in the English medical journals in regard to the propriety of physicians yielding to the requirement of some patrons that they should use the area doors instead of the front entrance in making professional calls We have not heard that any one ever succeeded in forcing this rule on the British medical profession It seemed then hardly possible that a similar attempt to put physicians on the same grade as grocers' delivery boys and servants' visitors would ever be made in this country, but such appears to be the case A Newark, (N J) physician, it is reported, has brought suit for $5,000 damages against the owner of a flat or apartment building who had made this rule and who attempted to prevent him using the front entrance, and the case is said to be arousing much interest in the medical fraternity of New York City, in certain parts of which like attempts to humiliate physicians are said to have been made There can be but one opinion among sensible people in regard to such performances, but a consciousness of this fact will not justify a physician in submitting to them Fortunately in most parts of this country we do not have to deal with this kind of snobbishness, but we can sympathize with those who have to contend with it It is to be hoped that the Newark physician will obtain full damages—they should be exemplary

SOME EXAMPLES OF THE NEED OF VACCINATION

There is some material in a recent bulletin of the Department of Health of the City of Chicago which we commend to the antivaccinationists With regard to smallpox conditions in Chicago during the preceding week the bulletin for July 20, 1907, says "Four cases of smallpox were sent to the Isolation Hospital during the week of July 13 One patient was an unvaccinated sister of a woman sent to the hospital a week previous Another was an unvaccinated man from Indianapolis, who saw a case 'just like his' on the car on which he was traveling just two weeks before the eruption appeared on his face Another is an unvaccinated man from La Grange, Ill, where he wandered about for ten days after he was attacked with the disease " Many and various reflections with regard to the vaccination delusion and the effects of compulsory vaccination may be made on this paragraph Of the four patients reported from a population of over 2,000,000 three were unvaccinated Considering how much the number of vaccinated people who had been exposed, nearly if not quite as much as these unfortunate victims of the disease, exceed the unvaccinated, it would be interesting to know why such a large proportion of the unvaccinated were picked out to be the next victims One of the unvaccinated patients had seen a person evidently suffering from smallpox, as the sequel showed, in a car in a neighboring city. So far as is known, he is the only one who caught the infection, though so many others were exposed There are few who without the protection of vaccination care to think of that unvaccinated man from La Grange, who wandered about for ten days after being attacked with smallpox, exposing ever so many people to the danger of infection If we are sure of the recency of our vaccination we can contemplate the possibility of exposure to smallpox with comparative equanimity

Medical News

ALABAMA

In Memory of Killebrew—The Mobile County Medical Society held a special memorial meeting July 27 in honor of its late president, Dr James B Killebrew, and passed resolutions setting forth the sterling qualities of the deceased and the loss sustained by his death

New College Building—The contract for the erection of an addition to the east wing of the building of the Medical Department of the University of Alabama, Mobile, has been let The last legislature appropriated $15,000 for the remodeling of the old building and the erection of the addition The work will begin at an early date

Typhoid—An epidemic of typhoid is said to exist at Tuskegee Normal School, where 27 cases, with 2 deaths, have been reported——Dr Robert B Harkness, health officer of Birmingham, reported to the Jefferson County Medical Society July 29, that while there were a number of cases of typhoid in one *locality of the city there was nothing like an epidemic* The society passed a resolution thanking the city health officer for his defense of the health of the community

ARKANSAS

To Get Evidence—Because of the alleged neglect of trainmen to enforce the provisions of the state anti drumming law, the Garland County Medical Society will, it is reported, employ detectives to travel on trains and gather evidence against trainmen who do not eject drummers from their trains, and also evidence against drummers themselves

Reorganization of Medical Board—The Arkansas Medical Board at its annual meeting reorganized and re elected Dr M L Norwood, Lockesburg, president, Dr Fred T Murphy, Brinkley, secretary, and elected Dr Montague Fink, Helena, vice-president, and Dr George V Poyner, Green Forest, treasurer Dr John W Meek, Camden, has resigned as a member of the board, and Dr Robert A Hilton, El Dorado, has been named to succeed him

CALIFORNIA

Unlicensed Practitioners Convicted—G W Chan, a Chinese herb doctor, of Los Angeles, was found guilty July 30 of practicing medicine without a license——Dr M V McGilvra, an osteopath of Los Angeles, is said to have been found guilty of practicing medicine without a license

City Surgeons Under Civil Service—The board of health of San Francisco has decided that hereafter surgeons of emergency hospitals must procure their position through civil service and positions may be held two years In case of vacancy in the office of chief surgeon the vacancy will be filled by the board of health from the surgeons on duty

In the Hands of the Law—Dr Charles V P Watson, Los Angeles, accused of having caused the death of Florence Grover by the performance of a criminal operation, was discharged on the ground that the evidence adduced was insufficient for conviction——In the suit of W C Reed against Dr J E Wilson Huntington Beach, for alleged malpractice, the judge found for the defendant

Board Sustained —The Supreme Court on July 8 handed down a decision sustaining the action of the State Board of Medical Examiners in refusing a license to practice medicine to James T Arwine, Los Angeles The plaintiff had presented a diploma from a medical college in Tennessee and licenses to practice in Indiana and in the District of Columbia, but did not take the examination as required by law

Personal.—Dr James T Watkins has been appointed health officer of San Francisco ——Dr Henry J B Wright has been elected secretary, and Dr Charles H Walter, president and health officer of San José ——Dr Edward R Taylor has been selected as mayor of San Francisco ——Dr George Berks, Fresno, sailed for Europe July 27 ——Dr Oliver D Hamlin, Oakland, returned from Europe July 27 ——Dr Ed W Hanlon, Marysville, has been appointed assistant to the Van Orden clinic, Vienna

CONNECTICUT

Commencement.—At the ninety fourth annual commencement exercises of Yale Medical School the address was delivered by Dr Frederick C Shattuck of Harvard, and a class of 28 was graduated

Personal.—Prof William H. Brewer has been elected president of the State Board of Health Dr Arthur J Wolff, Hartford has succeeded Dr Seldom B Overlock, Pomfret, as a member of the board ——Dr Louis I Mason, South Coventry, sustained severe cuts and bruises in an automobile wreck, July 29

Appropriation for Tuberculosis —The legislature has voted to allow $40,000 for the tuberculosis work of Hartford Hospital ——Dr John P C Foster, New Haven, has been named as chairman, and Drs Omer La Rue, Putnam, and Stephen J Maher New Haven, members of the commission appointed to investigate the spread and prevention of tuberculosis in the state

DISTRICT OF COLUMBIA

Medical Literary Bureau —On account of the death of Mr Aubrey M Skiles, manager of the Medical Literary Bureau, Washington, the bureau has been temporarily suspended, pending reorganization

GEORGIA.

Roof Ward on Hospital —An open air ward is being prepared on the roof of the Macon City Hospital The new ward will have accommodation for eight patients

Personal.—Dr R V Martin, Savannah, has been commissioned first lieutenant and assistant surgeon in the National Guard of Georgia and assigned to duty with the First Infantry ——Dr A S Bacon, Albany, has returned from Europe ——Dr Clyde D Elder Marietta, was severely *injured in a runaway* accident July 30 ——Dr J D S Fairey, president of the board of health of Augusta, has resigned

ILLINOIS

Tuberculosis Society Wants Site —The officers of the Peoria Society for the Prevention of Tuberculosis are endeavoring to purchase or lease a site for a tent sanatorium on the Upper River or on the Galena road It is estimated that there are at least 100 persons in the city suffering from tuberculosis many of whom would be glad to pay for care and treatment in such an institution

Births Must be Reported.—The State Board of Health, in a recent bulletin, calls attention to the fact that the law provides a fine of not less than $1 nor more than $100 for failure to report births, and suggests that concerted action on the part of state's attorneys, whereby all violators would be prosecuted, would render indifference to this particular law an exceedingly expensive matter to many physicians

Personal.—Dr William E Chalstran, Lane, who recently lost his sight, has been taken to his home in Galesburg, after treatment in Chicago for several weeks ——Dr Howard A Wharff, Edwardsville, has been made a member of the staff of physicians of a nose, ear and throat hospital in St. Louis, and assistant to Dr Max A Goldstein ——Dr Joseph DeSilva, Rock Island, has been appointed a trustee of the State Institution for the Feeble Minded Lincoln, vice Dr John Wagner, McLean, resigned ——Dr Ernest C Gwinn, Sadorus, suffered severe contusions and a sprain of the back, in a runaway accident July 25 ——Dr John R. Webster Monmouth, is reported to be seriously ill at the home of his son in Chicago

Chicago

Personal.—Dr William J Butler has returned after three months abroad ——Dr Joseph P Smyth has been elected high medical examiner of the Catholic Order of Foresters ——Dr Eugene S Talbot was elected first honorary president of the International Stomatological Congress, which met in Paris, France, August 8

Dowdall Convicted —Edward Dowdall, who was convicted a few days ago of misrepresentation regarding the examinations of the State Board of Health, was sentenced on August 9 to a of the State Board of Health at its meeting July 19 ——Drs year's imprisonment, the limit provided by the law He was also tried on the charge of practicing medicine without a state license, found guilty and a fine of $100 and costs assessed against him

Deaths of the Week.—The mortality for the week ended August 10 was 646, an increase of 143 over the previous week and of 43 over the corresponding week of last year Acute intestinal diseases caused 176 deaths, consumption, 63, nephritis, 47, heart diseases and violence (including suicide), each 39, pneumonia, 38, and cancer, 30 Scarlet fever headed the list of communicable diseases with 13 deaths, followed by typhoid fever with 10, diphtheria with 6, whooping cough with 3, and measles and influenza, each with one death

INDIANA

Free Antitoxin —The State Department of Health is now prepared to furnish diphtheria antitoxin to the poor, when the blanks are properly filled out and presented at any drug store The bills will be paid by the township trustee

Communicable Diseases —Seven cases of diphtheria have appeared in Buck Creek Township, with one death ——At Lansing near Hammond whooping cough is reported to be epidemic, and 21 cases have been reported, with one death ——At Arthur 8 or 10 cases of smallpox of serious type are reported ——The *epidemic* of measles in Muncie has subsided During its progress 1,347 cases were reported

Personal —Drs Adolph F Schultz and James M Dinnen have been appointed surgeons to the Fort Wayne Electric Company, vice Dr Maurice Rosenthal, resigned ——Dr George G Graessle, Seymour, was taken to Indianapolis for operation August 1 ——Harold O Ruh Bloomington has received $250 from the Rockefeller Institute for Medical Research for continued *investigation* on phagocytosis in the pathologic laboratory of Indiana University ——Dr Louis W Tennant, Larwill, has been seriously ill with renal colic.——Dr John J Baker, Indianapolis, has been appointed *chief surgeon* of the Indianapolis Crawfordsville & Western Traction Company ——Dr Harvey J Clements Converse, has accepted a chair in Willamette University, Salem, Ore

IOWA

Mason City Hospital.—The Sisters of Mercy of Duluth have agreed to take charge of the new hospital to be erected in Mason City and have also agreed to contribute $30,000 toward the cost of the building Mason City is to furnish the remainder of the $50 000 required and a site for the institution.

College Merger —The Sioux City College of Medicine will, it is reported, partially affiliate with Morningside College, beginning with the work of this year W W Scott, professor of chemistry at Morningside College, has been appointed to a similar *position* in the medical college T C Stevens, professor of embryology will have charge of the classes in this subject at the institution

Work of the State Laboratory —Dr Henry Albert, director of the State Board of Health bacteriologic laboratory, Iowa City, in his annual report, states that during the year 8,456 examinations were made, of which 3,853 were for diphtheria, 2,599 for tuberculosis, 711 for typhoid fever and 693 miscellaneous There are now 720 culture stations of the State Board of Health During the year these stations have been supplied with 15,753 diagnosis outfits, of which 7,084 were for diphtheria, 2,567 for typhoid fever and 6,102 for tuberculosis ——The *Iowa Health Bulletin*, the official organ of the State Board of Health appeared in a new, distinctive and attractive form, beginning with the July issue

Personal.—Dr Louis A Thomas was appointed secretary Fred W Powers, Waterloo, and Louis A Thomas, secretary of the State Board of Health, have been appointed members of a committee to examine and pass on applicants for certificates as graduate nurses ——Dr Wilbert E Harriman, Ames, has gone to Colfax for treatment at the springs ——Dr Samuel H Watson, Blairstown, is taking preventive treatment for hydrophobia at the Pasteur Institute, Chicago ——Dr J H Farrell, Winthrop, has been appointed assistant physician at Maui, Hawaii.——Dr E W Meis Sioux City has been appointed city bacteriologist ——Dr Burton Howell, has been appointed assistant in obstetrics to the State University Medical Department——Dr Wilhelm J Jepson, Sioux City, has been commissioned as major and surgeon of the Fifty sixth Infantry, Iowa National Guard, vice Dr Donald Macrae, Council Bluffs

KANSAS

Itinerant Medicine Venders Licensed.—The last legislature passed a law providing for a license of $50 a year for itinerant medicine venders The licenses are for "itinerant venders of drugs and medicines," and give permission to sell "drugs medicines, nostrums, ointments or appliances of any kind for the treatment of any disease, injury or bodily defect"

Tuberculosis Treatment in Penitentiary—A tent has been erected in the prison farm of the State Penitentiary, Lansing, to which 14 of the more severe cases of tuberculosis among the convicts have been transferred, and already the patients are said to be gaining in weight and strength It is said that Kansas is the first state to give convicts open-air treatment for tuberculosis

Personal—Dr Cyrus E Hunt, Eldorado, has been elected secretary of the Butler County board of health——Dr Samuel C Emley Lawrence, has been appointed physician of the University of Kansas——Dr Aloin Schellack has been appointed deputy health officer for Eudora and vicinity in Douglas County——Dr Wilson R Priest, Concordia, has been elected grand medical director of the Fraternal Aid Association

KENTUCKY

Epidemic Diseases—Typhoid is said to be epidemic at Owensboro, Auburn, Glasgow and Booneville——An epidemic of smallpox is said to exist at Yocum Creek, Morgan County, where more than 30 cases are reported

Anti-Tuberculosis Association.—The Kentucky Anti-Tuberculosis Association has moved into its new quarters at 119 West Chestnut Street, Louisville The association has already treated 49 patients in their homes, has supplied milk to 15 patients, and has furnished a tent to one man who wishes to live out of doors

Illegal Sale of Cocain—The Kentucky State Board of Pharmacy has called the attention of the secretary of the State Board of Health to the need of cooperation in the campaign against illegal sale of cocain The Kentucky Board of Pharmacy has, it is said, been greatly handicapped in its work by some physicians who have not only been prescribing cocain, but have prepared powders composed largely of cocain, which they have sold to their patients who are addicted to the use of it Dr J N McCormack, secretary of the State Board of Health has promised the board of pharmacy its hearty support Five Louisville druggists have already been indicted for selling cocain without a prescription

Registration of Births—A warrant was recently taken out against Dr John Goodman by Health Officer Allen of Louisville because Dr Goodman had failed to report a birth to the health office Dr Goodman, through his attorney held that the ordinance under which he had been arrested which provides for the report to the health office of every birth at which a physician is in attendance was invalid because the general council, in making the ordinance a law, exceeded its power under the charter given the city by the state The defense was granted the privilege of submitting briefs on the question involved Dr Goodman admitted not having given the information required and stated that he had not done so because previously he had often reported births, which were later printed in the papers He said that the ordinance he was charged with violating provided that no publicity should be given births, and that the records should be used merely for statistical purposes Hence, he decided not to give the information to the health officer The assistant city attorney said in defense of the statement that the papers sometimes printed the births, that it was no fault of the health office, as they did not send them to the papers, but that they were put into records to which the newspapers had access and which the health office had no authority to keep from the public

Graduations—A class of 94 was graduated at the annual commencement exercises of the University of Louisville Medical Department August 1 T L Burnett, LL D president of the board of trustees, conferred the degrees and Dr Joseph B Marvin awarded the honors——At the fifty eighth annual commencement exercises of the Kentucky School of Medicine held in Louisville July 12, a class of 64 was graduated The degrees were conferred by John H Leathers Dr William A Wathen dean of the college made the annual address Dr Fouche W Samuels delivered the baccalaureate address and Dr William H Warren announced the honors——On July 30 the Hospital College of Medicine, Louisville graduated a class of 94 Dr Philip R Taylor, dean of the college presented the diplomas, and Dr J A Rush delivered the valedictory address

Personal—Dr Jefferson D Robertson, Paducah, was overcome by heat in front of his office, July 20——Dr Robert E Gatz, Louisville, suffered the loss of his laboratory by fire, July 16——Dr Ellis Duncan Louisville, has been made coroner of Jefferson County, vice Dr Harris Kelly——Dr Heman Humphrey, Louisville, has been named by the board of public safety as city physician of the East district vice Dr Llewellyn P Spears, resigned——Dr Samuel P Myer and W J Young have been appointed to positions in the Louisville health department——Dr George E Davis, Lawrenceburg will leave for Europe this month——Dr Benjamin T Hall, Paducah fell August 2 and injured his left knee——Dr John K. Wood has been appointed assistant physician at the Central Kentucky Asylum for the Insane, Lakeland——Dr S Johnson Hall, Louisville, was operated on for the removal of gallstones, August 2, at the Norton Infirmary——Dr William A Keller has been reappointed assistant physician for the west district of Louisville, and Dr Meverell K. Allen has been appointed health officer for the city

LOUISIANA.

Will Admit Women—The Tulane University Medical Department, announces that provided 10 women present themselves for matriculation at the next session, which begins in October, the privileges of the college will be extended to them

Personal—Dr Thomas S Jones has been elected president of the board of health of Clinton——Dr John G Martin Lake Charles, has been appointed a member of the State Board of Health, vice Dr A Feltus Barrow St Francisville term expired——Dr Robert W O'Donnell has been elected president, and Dr Charles C Cage, sanitary inspector of the board of health of Monroe——Dr and Mrs Latzi L Szabary New Orleans, have sailed for Europe

Tuberculosis—The Louisiana Anti-Tuberculosis League announces that it will immediately begin the construction of a sanatorium in St Tammany parish The plans for the sanatorium comprehend a group of small cottages in a semicircle on a 50 acre tract, near the town of St Tammany They will be built according to the most scientific plans and will soon be ready for occupancy——The city board of health of New Orleans on July 9 adopted a rule making it compulsory to report cases of tuberculosis A circular letter has been sent to all physicians in the city, urging them to comply with the requirement of the board

MAINE

Fogg Memorial Library—The William Fogg Memorial Library, in memory of the late Dr John H Fogg, was recently dedicated at Eliot The library building is situated on the old Fogg farm one of the most prominent sites in the town

Personal—Drs Ernest F MacVane, Long Island, and Magnus G Ridlon Kezar Falls, have been appointed house physicians of the Maine Eye and Ear Infirmary Portland—The office of Dr John C Rogers, Pembroke, was destroyed by fire July 4

Society Meeting—At the annual meeting of the Kennebec County Medical Society held July 25 in Augusta the following officers were elected President, Dr George R Campbell, Augusta, vice-president, Dr Theodore E Hardy, North Vasselboro, secretary treasurer, Dr Wellington Johnson, Augusta, and executive committee Drs Howard A Milliken, Hallowell, Percy S Merrill, Waterville, and Alton Sawyer, Gardiner

MARYLAND

Baltimore

Personal—Dr J N Reik sailed for Europe August 7——Dr Harry Gross has gone to Europe——Dr H Barton Jacobs is visiting Dr William Osler in Oxford, Eng——Dr Albertus Cotton was recently operated on for appendicitis at the Baltimore City Hospital

The Howard Estate—By the will of the late William T Howard his estate is equally divided between his wife and his brother's family who live at Richmond, Va At the death of his wife her portion is to go to his brother's family The estate is valued at about $175 000 The library and the gynecologic instruments of Dr Howard are bequeathed to the University of Maryland

MASSACHUSETTS

Personal.—Dr Emma W Mooers, formerly assistant in pathology at the McLain Hospital, Waverley, has accepted a posi tion as assistant instructor in the psychiatric clinic, Munich, under Prof Dr Kraeperlin——Dr George H. Finch, Springfield, was operated on for appendicitis at the House of Mercy Hospital, August 1

Consumption and Whooping-Cough Added to List.—By direction of the State Board of Health, consumption and whooping cough have been added to the list of diseases dangerous to public health

Diphtheria—The prevalence of diphtheria is causing alarm at Hamilton and Wenham, where nine cases have been reported.——Several cases of scarlet fever have also occurred.

MINNESOTA.

Personal.—Dr John A. Vieregge, St Paul, sustained severe bruises in a collision between his buggy and an automobile, July 23——Drs Seller J Aspelund and Henry Goehrs, Minneapolis, have been appointed assistant city physicians——Dr Walter J Marcley, superintendent of the Minnesota State Sanatorium for Consumptives, Walker, has assumed charge of the institution.

Fight Against Tuberculosis—Dr Harry A. Tomlinson, superintendent of the St Peters State Hospital, is at the head of a movement against tuberculosis Facilities for the scientific treatment of patients suffering with tuberculosis are to be given to the medical staff at St Peter's Hospital. The appropriation voted by the last legislature will be used in constructing and equipping a ward in which consumptives may be cared for and the open air treatment employed. The new pavilion will have accommodation for 60 patients

Society Meetings—At the sixteenth annual meeting of the Southern Minnesota Medical Association, held in Rochester, August 11, the following officers were elected President, Dr Charles O Cooley, Madelia, vice presidents, Drs Frederick H. Rollins St Charles, and George L. S Schultze, Owatonna, and secretary treasurer, Dr William T Adams, Elgin Owatonna was selected as the next meeting place——At the annual meeting of the Wabasha County Medical Society, held in Plainview, the following officers were elected President, Dr John P Dougherty, Wabasha, vice president, Dr Henry T McGuigan, Mazeppa, and secretary treasurer, Dr William F Wilson, Lake City Lake City was selected as the place for the next meeting

Requirements for Cars—The Minnesota State Board of Health is insisting on the strict enforcement of the sanitary regulations The regulations of the board include that no person shall spit on the floor, furnishings or equipment of any railway coach, depot or depot platform in the state. Railways are required to furnish an ample number of spittoons for the cars When a water borne disease has developed in epidemic form, water for car tanks from that locality shall not be used without the approval of the board. The drinking water and ice supply of coaches must contain no deleterious ingredients All day coaches must be cleaned once each day or at the end of a trip, and coaches in which persons afflicted with contagious diseases have been carried must be closed, and remain closed and unoccupied until they have been thoroughly disinfected.

MISSOURI.

Unlicensed Practitioners—Assistant Health Commissioner William B Winn, St Louis has filed charges against six physicians on charges ranging from misdemeanor to felony He states that there are about 75 physicians in the city practicing without a license Some of these he says are not registered, but hold certificates under the names of physicians who have been dead for several years

Society Meeting.—At the annual meeting of the North Missouri Medical Association, held at Gallatin, the following officers were elected President, Dr James Hanks, Brashear, vice-presidents Drs Isaiah Knott, Jr., Keytesville, and David F Hanna Gallatin, corresponding secretary, Dr Ezra C Grim, Kirksville, recording secretary, Dr Oliver McEwen, Shannondale, and treasurer, Dr Robert Haley, Brookfield.

Tuberculosis Notes.—The board of managers of the State Sanitarium for Incipient Tuberculosis, Mount Vernon, the new addition to which was opened August 1, elected Dr William Porter, St. Louis, medical director, and Dr Orville H. Brown, St Louis, physician in charge——Drs Andrew J Detweiler and John J Bourn, Hannibal, have been appointed consulting physicians to receive applications for the new state hospital for tuberculosis Mount Vernon.——A branch of the Society for the Relief and Control of Tuberculosis is being formed at Kansas City under the temporary direction of Drs Walter M Cross, Edward L. Stewart and Edward W Schauffler——Mrs Grace Leattle has announced her intention to give $200,000 to the St Louis Society for the Prevention and Relief of Tuberculosis

NEW JERSEY

Personal.—Dr Samuel English, Camden, has been appointed medical superintendent of the new State Tuberculosis Sanitarium at Glen Gardner and will begin his new duties at once——Dr J Bart Webster, Atlantic City, sailed for Europe, August 11

Bogus Doctors in Atlantic City—It is reported that the physicians of Atlantic City have united to drive out bogus doctors and illegal practitioners During the height of the season there is a large influx of these individuals from Philadelphia and New York City An appeal has been made to Dr John W Bennett, Long Branch, secretary of the State Board of Medical Examiners, to take some measure to drive these men from the city

NEW YORK.

Personal.—Dr William W Jones has been elected physician for the Second ward of Rome, vice Dr Albert E Dietrich, resigned——Dr Moses A Stivers, Middletown, has been commissioned captain and assistant surgeon, N G N Y, and assigned to the First Infantry, and Dr Arthur S Moore has succeeded him as surgeon of Company I——Dr F G Schaible, Albany, has been appointed assistant physician at the Manhattan State Hospital

State Food Tests—State Commissioner of Health, Dr Eugene H. Porter, announces that the analysis of food products has shown improvement in the second months' tests During June 14 samples of various kinds of canned meats were found to contain boron preservatives In July samples of as many of these same 14 brands as the department could find on sale were again submitted to tests, and of nine that were purchased but one showed the presence of boron preservative The Department of Health is also testing oils used for illuminating or heating purposes to determine whether they come up to the required standard, which specifies that they must not flash at a temperature below 100 F

New York City

New Jewish Hospital.—Plans have been filed for remodeling two three story houses into a hospital, at an estimated cost of $10,000

Personal.—Dr Stephen G Cook, the oldest police surgeon of Brooklyn, has resigned, the resignation to take effect August 20——Dr and Mrs Eugene Fuller sailed for Europe, August 7

Contagious Diseases—There were reported to the sanitary bureau for the week ending August 3, 354 cases of tuberculosis, with 163 deaths, 313 cases of measles, with 30 deaths, 220 cases of diphtheria, with 26 deaths, 157 cases of scarlet fever, with 18 deaths, 84 cases of typhoid fever, with 9 deaths, 24 cases of whooping cough, with 12 deaths, 13 cases of cerebro spinal meningitis, with 15 deaths, and 8 cases of varicella, a total of 1,173 cases and 273 deaths

Increase in the Death Rate—During the two weeks ended Aug 3, 1907, there were 3,615 deaths, and for the same period in 1906 there were 2,907, an increase of 708 During the week ended August 3 there were 1,804 deaths in the five boroughs, 1,653 of these were in children under 5 years of age In the same week of 1906 only 1,156 children under 5 years died Of the deaths during the week 546 were of children from diarrheal diseases, against 342 during the corresponding week of 1906

Deputy Police Commissioner and the Coroners—Deputy Police Commissioner O'Keefe recently issued an order to the police not to allow any one to touch or move a body in a suspicious case before a detective arrives The board of coroners held a formal meeting and refused to allow such an order to include them, and announced that if a policeman interferes with them in the pursuit of their duties he will be subject to arrest, in accordance with Section 1776 of the New York City Consolidation Act.

NORTH CAROLINA.

Personal.—Dr Frederick K. Cooke, Wake Forest has removed to Asheville to practice——Dr Thomas R. Little, Greensboro, was successfully operated on for appendicitis a few days ago——Dr Arthur T Pritchard, Asheville, has been appointed assistant surgeon of the Southern Railway——Dr Zeb M. Caveness, Wakefield, was stabbed by a drunken man July 10, but was only slightly wounded.——Dr C A. Shore, Winston Salem, has been made director of the State Labora tory of Hygiene, vice Dr McCarthy——Drs Edward C Register, Charlotte, and David T Tayloe, Washington, have been appointed members of the State Board of Health, to succeed Drs William P Ivey, Lenoir and James A Burroughs, Asheville——Dr Jacob F Highsmith, Fayetteville, announces that he will withdraw from general practice September 1, and will devote his attention to surgery and gynecology

NORTH DAKOTA

Personal—Dr A J McCannel has been appointed health officer of Minot, vice Dr Samuel G White, removed to Anamoose——Dr Frederick H Bailey, Fargo, has recovered from his recent operation for appendicitis——Dr Eduard Lohrbauer Lakota has been appointed coroner of Nelson County, vice Dr William L Cowper, Michigan

Flaw in Vital Statistics Law—Owing to an oversight on the part of the state legislators the work of compiling the vital statistics of the state may have to be discontinued At the last session of the legislature a vital statistics law was passed the changes in which, from the old law, involved at least a double amount of stationery, but no provision was made for funds to cover the extra supplies needed

PENNSYLVANIA

Bequests—By the will of the late Mrs Lydia Hickman of West Chester, the Chester County Hospital and the Wentworth Home receive $500 each

Filtered Water for Reading—It is stated that at the next meeting of the city's council an ordinance will be introduced to be submitted to vote in November, including a proposal to borrow $500,000 for the enlargement of the filtration plant

Philadelphia

Fire in Kirkbride's—Fire broke out in the laundry and lighting plant of the Pennsylvania Hospital for the Insane, August 10, and the laundry building was entirely destroyed, with a loss exceeding $20,000

Health Report—The total number of deaths reported for the week ended August 3 was 537, a decrease of 69 from the preceding week and an increase of 18 over the number reported in the corresponding week of 1906 The principal causes of death were Typhoid fever, 9, diphtheria, 10, meningitis, 5, consumption, 58, cancer, 22, apoplexy, 6, heart disease, 34, acute respiratory disease, 33, enteritis, 18, hepatic cirrhosis, 10, appendicitis, 4, Bright's disease, 38, congenital debility, 18, suicides, 8, old age, 9, accidents, 13, and marasmus, 13 There were 126 cases of contagious disease reported, with 18 deaths, as compared with 118 cases and 15 deaths reported in the previous week

SOUTH CAROLINA

Personal—Dr Julius H Taylor, Columbia, has been appointed local surgeon for the Southern Railway——Dr Charles A Simpson has been designated health officer of Greenville until the regular election

Medical Scholarships—Governor Ansel has named the following beneficiaries for scholarships in the South Carolina Medical College for the ensuing year First district, Marion C Palmer, Charleston, second district, Richard W Hughes, Hampton, third district, J H Pratt, Ninety-Six, fourth district, D D Alexander, Spartanburg, fifth district, Ralph K Foster, Lancaster, sixth district, E Theron Kelley, Darlington, and seventh district, D Socrates Keisler, Summit

TEXAS

Prohibit Distribution of Medical Samples—The city attorney of Waco has been instructed to submit an ordinance prohibiting the distribution of medical samples in that city

Infirmary Dedicated—The new addition to the St Joseph's Infirmary Fort Worth, recently erected at a cost of $85,000, was formally dedicated July 7 The new building contains 110 rooms and will accommodate nearly 200 patients

Medical College—A four story building for the Medical Department of Baylor University is to be erected at Dallas on the site of the Baptist Memorial Sanatorium The structure will cost about $30,000 and is to be completed by October 1

Dengue at Brownsville—The U S P H and M H officer at Brownsville reported 300 cases of dengue fever in that place, July 25 On July 28 he reported that no further increase had occurred and that the cisterns had been ordered to be oiled and screened

Ban on Consumptives—The state health officer announces that the governor will shortly issue a proclamation declaring tuberculosis to be a contagious disease and making it a statutory offense punishable by a fine of $500 to bring a person afflicted with the disease into the state

Personal—Dr Amos C Walker, Fort Worth, has recovered from the operation recently performed on him in Chicago——Dr Edward M Thomas, Georgetown, has resigned as physician of Williamson County——Dr J B Bauguss, Heidenheimer, fractured his right leg above the ankle in a runaway accident, July 15

No Medical Law—It has been discovered that in the acts of the thirtieth legislature the medical law was repealed on July 12 and the board existing thereunder went out of existence and was deprived of its function As the governor has not appointed a board under the new law and has until September 1 to do so, a hiatus has been existing since July 12 and will continue until the new board is appointed In the meantime there can be no examinations nor can licenses be issued to practice medicine in the state

State Anatomic Board Organizes—The State Anatomic Board provided for by the last legislature, consisting of a professor of surgery or anatomy from each medical college in the state, met in Austin, July 17, for organization, and Dr John B Smoot, Dallas, was elected temporary chairman In the permanent organization Dr Ira C Chase, Fort Worth, was elected chairman, Dr William Keiller, Galveston, secretary, and the president, secretary and Dr Harold M Doolittle, Dallas, were elected as executive committee The law provides for the use of unclaimed dead bodies by medical colleges The distribution of anatomic matter began about August 1

VIRGINIA

Tuberculosis Exhibit—At the tuberculosis exhibit in the new Social Economy building at Jamestown, which was formally opened July 6, the initial address was made by Dr Livingston Farand, New York City, on "The Campaign Against Tuberculosis"

Surgical Personals—Dr George C Hoge, Unison, received an accidental gunshot wound of the leg at Washington, July 26 He was taken to the Emergency Hospital, where his wound was found to be not serious although painful——Dr Edward H Claud, Portsmouth, was operated on for appendicitis, July 25, at St Christopher's Hospital, Norfolk——Dr Samuel E Hughes, Danville, was operated on for appendicitis at the General Hospital, July 29

Society Meetings—At a meeting of the Rappahannock Medical Society, held in Fredericksburg, Dr Joseph N Barney, Jr, Fredericksburg, was re elected president, and Dr William J Chewning, Fredericksburg, secretary——At the eleventh semi annual meeting of the Southwest Virginia Medical Society, held at Marion, July 17 and 18, the following officers were elected President, Dr Albert S Priddy, Marion, vice presidents, Drs W K Vance, Bristol, Tenn, and T M Cherry, Glamorgan, secretary treasurer, Dr Peyton B Green, Wytheville The next meeting will be held in January at Roanoke——At the fourth annual meeting of the South Piedmont Medical Society, held in Chase City, July 16, the following officers were elected President, Dr Floyd J Gregory, Keysville, vice-presidents, Drs Samuel Lile Lynchburg, W Macon Smiley Houston, and Luther A Robertson, Danville, secretary, Dr George A Stover, South Boston (re elected), and treasurer, Dr James L Kent, Lynchburg (re elected) Dr Stuart McGuire, Richmond, who was the guest of honor of the society, gave an address on suppurative peritonitis

WEST VIRGINIA

Personal—At the annual meeting of the State Board of Health, Dr Joseph E Robins, Claremont, was elected president and Dr Hugh A Barbee, Point Pleasant, was re elected secretary Seventy applicants for license appeared and were examined——Dr John C Cook, Fairmont, jumped from a buggy to avoid a collision with a train in Grafton and sustained a severe sprain of the ankle——Dr W C McGuire, Huntington, has been commissioned executive health officer of Cabell County and president of the county board of health

Local Anti-Tuberculosis Association—The West Virginia Anti Tuberculosis League has been chartered with a capital stock of $1,000 by Drs Daniel Mayer, Charleston, Hugh A Barbee, Point Pleasant, Richard T Davis, Charleston and Wallace H Longstreth, Terra Alta The object of the league is 'To furnish information, instruct and teach ways and means of preventing tubercular infection and raising the standard of physical resistance, to arrest the progress of and to effect cures in those who are now or may be infected with tuberculosis, to encourage the establishment of state, public and private sanitariums in West Virginia, and to centralize cooperative efforts by organizing local, county and municipal leagues, to be under the immediate management of competent professional counsel, thus enabling unfortunate victims of tuberculosis and its tendencies to obtain and have modern sanitorial management, training and treatment within the confines of their respective homes" Dr Daniel Mayer is secretary, Dr Hugh A Barbee treasurer, and Dr Wallace Longstreth general field agent of the league

GENERAL

Yellow Fever—Ten cases of yellow fever were reported August 10 from the military post of Cienfuegos, Cuba The source of the infection has not yet been determined Dr Agramonte, the yellow fever expert, and Major Henry P Birmingham of the Army Medical Department have gone to Cienfuegos to take charge of the situation and report Sergeant Metcalf, hospital corps, U S Army, died at Cienfuegos from yellow fever, August 12 The other cases are light and no new ones are expected The detachment of the Army at Cienfuegos has been using a portion of the Civil Hospital building for hospital purposes, and it is believed that the infection came from unrecognized cases in the civil end of the hospital The military forces will accordingly vacate the hospital——The U S P H. and M H Service states that there have been only five cases of yellow fever in the United States this year, four of which occurred in Galveston in March last, imported from Para, and one case at the Mississippi River quarantine, below New Orleans

Psychiatrists to Meet.—The International Congress for Psychiatry, Neurology, Psychology and the Care of the Insane will be held in Amsterdam, Sept 2 7, 1907 Among the delegates from governments and different societies may be mentioned Dr Henry G Beyer, medical inspector, United States Navy, Drs Smith Ely Jelliffe, Carlos F MacDonald, Joseph Collins and B Sachs, New York City, Dr W W Keen, Philadelphia Dr W A. White, Washington, Dr Mary A Wolfe, Norristown Pa , Dr C H Hughes, St Louis, and Dr E E Southard, Boston Among the papers announced are a considerable number from the United States There will be three exhibitions one of historical documents relative to former epochs in the history of the treatment of the insane, another showing objects relative to the *nursing* of lunatics and neurotics, a third showing instruments employed in the psychiatric, neurologic and psychologic laboratories Receptions, excursions and other entertainments have been provided for the members

CANADA.

Home for Medical Council—The Ontario Medical Council has purchased a building site on University Avenue at a cost of $18,150

Smallpox.—Dr Charles Sheard, health officer of Toronto reports that there are 27 cases of smallpox in the city and that 63 people are quarantined. Two sources of infection have been traced

New Quarantine Station.—Dr Montizambert, superintendent of Dominion quarantines, and Dr Alfred T Watt, Victoria, superintendent for British Columbia, have gone to Prince Rupert to establish a quarantine station

New Medical Building—The competition for plans for the new medical building for McGill University, Montreal, has resulted in the acceptance of the plans of Messrs Brown and Vallance Montreal The new building will cost not less than half a million dollars

Honor Registrar Pyne—At a meeting of the Ontario Medical Council, held in Kingston, a resolution was unanimously adopted bearing testimony to the faithful work, the unremitting energy and vigilance of the retiring registrar, Hon Dr Robert Allan Pyne Toronto who, after nearly 30 years' service has been obliged to resign

Attending British Association—The following Canadian physicians are attending the meeting of the British Medical Association President Dr Richard A Reeve Irving H Cameron, Fred N G Starr Dr Allan M Baines, James A Temple, Herbert A Bruce Arthur W Mayburv, Helen MacMurchy, and William Oldright Toronto Dr William Burt, Paris, Ontario, Dr Alfred B Atherton Fredericton, N B , and Drs Herbert S Birkett and Starkey, Montreal

Hospital News.—Belleville, Ont , will spend $10 000 on a new isolation hospital——A new hospital is to be erected at Calgary Alta at a cost of $140 000 It is to consist of a main building maternity hospital, isolation hospital and nurses' home——A $12 000 hospital is to be built at Souris Man——A maternity hospital and nurses' home is to be added to the New Westminster (B C) Hospital

Academy of Medicine Officers—The following is the complete list of the first officers of the Academy of Medicine, Toronto President, Dr James F W Ross, vice president, Dr Alexander McPhedran, secretary, Dr Herbert J Hamilton, treasurer, Dr David J G Wishart, members of Council, Mr Irving H Cameron, Dr John T Fotheringham, Herbert A. Bruce, Fred N G Starr, Edmund E King, Richard A Reeve, William P Caven, Harry B Anderson, John A Amyot, Albert A Macdonald, Robert J Dwyer and Robert D Rudolf Section on Surgery Chairman, Dr Newton A Powell, editor, Dr Charles B Shuttleworth, and secretary, Dr Harry A Beatty Section on Medicine Chairman, Dr William J Wilson, editor, Dr John Ferguson, and secretary, Dr W Harley Smith Section on Pathology Chairman, Dr William Goldie, secretary Dr E Stanley Ryerson, and editor, Dr Henry S Hutchison

Personal—Drs Oswald M Jones, Frank W Hall and Richard H Carter, Victoria B C, are in Europe——Dr Donald Armour, formerly of Toronto, has been appointed lecturer on the spinal cord at the College of Physicians and Surgeons of London, England——A portrait of former Dean Walter B Geikie of Trinity Medical College, is being painted and will be hung in the Toronto Academy of Medicine——Drs Harry James and J S Pritchard, Toronto, have been added to the resident staff of the Muskoka Sanatorium——Dr F H Scott, Toronto has been appointed teacher of physiology in University College, London, England——Dr Correlli C Field has been made a member of the dispensary and outdoor staff of the Winnipeg General Hospital and Dr P H Galloway has been made orthopedic surgeon of the institution——Dr John L Bray, Chatham, has been made registrar of the College of Physicians and Surgeons of Ontario, vice Dr Robert A Pyne, Toronto, resigned——Dr Robert M Simpson, Winnipeg has gone to Europe——Dr William Bayard Saint John, N B who has been in practice in that city for 70 years, has received the degree of doctor of laws from his alma mater, the University of Edinburgh——Dr Edward A Preston, St John, N B, is reported to be critically ill from heart disease

Society Meetings—The twenty seventh annual meeting of the New Brunswick Medical Society was held in St John, July 16 The registrar reported 273 names on the provincial register The following officers were elected President, Dr Joseph M Deacon, Milltown, vice presidents, Drs John R McIntosh, St John, and A. G Ferguson, Dalhousie, secretary, Dr Robert G Day, St John, corresponding secretary, Dr Clinton T Purdy, Moncton, treasurer, Dr George G Melvin, St John, and trustees, Drs Alban F Emery, William Warwick and A Pierce Crocket, St John The next meeting of the society will be held in St Stephen, July 16, 1908——At the sixteenth annual meeting of the Maritime Medical Association held in St John, N B, July 17 and 18, the president in his annual address made a plea for less crowding in cities and the enactment of a law preventing the marriage of persons physically or mentally unfit The following officers were elected President, Dr Murdock Chisholm, Halifax, N S , vice president for Nova Scotia, Dr George E DeWitt, Wolfville, vice president for New Brunswick, Dr J V Anglin, St. John, vice president for Prince Edward Island, Dr John Jardine, Summerside, secretary, Dr George Melvin, St John, N B, and treasurer, Dr George W T Farrish, Yarmouth, N S

FOREIGN

Addition to Cancer Institute—The Berlin Cancer Institute, which is under the direction of von Leyden will receive a considerable enlargement about October 1 New laboratories for the investigation of cancer will be built in a house in the neighborhood of the Charité

Reception for Visiting Scientists.—In honor of the foreign scientists who will visit Berlin for the International Congress of Hygiene a reception will be held in the exhibition hall in the zoological garden September 28, under the auspices of the medical profession of Berlin

Alleged Cholera in St Petersburg—A cable report, dated August 8, states that apprehension has been aroused by the suspicious death of a cab driver, supposedly from cholera The sanitary authorities have quarantined sixteen cab drivers who lived in the house where the man died, and are taking other rigorous preventive measures

Orthopedic Surgeon Appointed for German Schools—Dr J Taendler has been appointed orthopedic surgeon to the schools in Charlottenburg The object of this new arrangement is a thorough investigation and control of school children affected with spinal curvature As an aid in this effort, orthopedic gymnastic courses will be established in the gymnasiums (Turnhallen) of the schools

Personal.—Sir Thomas McCall Anderson, Glasgow, has been appointed honorary physician in ordinary to King Edward, to succeed the late Sir William Gairdner——Prof Alexander McPhail, of St Mungo's College, Glasgow, has been appointed lecturer on anatomy in the Charing Cross Hospital Medical School of the University of London——Dr Graham Steele, Manchester, has been appointed professor of medicine in the University of Manchester

Cerebrospinal Meningitis in Western Germany.—Some alarm has been created by the demand of some of the Berlin political papers for a thorough official investigation of the spread of cerebrospinal meningitis in western Germany The *Deutsche medizinische Wochenschrift*, July 25, expresses the opinion that there is no real cause for alarm as, although there is an increase of the number of cases in Westphalia and the Rhine provinces, it is not so marked as to justify the fear of an extensive spread of the disease

LONDON LETTER

(From our Regular Correspondent)

London, Aug 3, 1907

Sanatorium for Consumptives

Reference has previously been made to the results achieved at the sanatorium built in connection with the Brompton Hospital for Consumptives To Dr Paterson, the superintendent, belongs the credit for inaugurating the graded system of outdoor employment that has brought about the results The important point is the systematic adjustment of occupation to the condition and capacity of the individual Patients in the worst condition remain in bed and are attended as in a hospital Those fit to leave their beds, but not strong enough for exertion, rest on couches in the open air, under cover, if necessary, and occupy their hands with some light task, such as making wool mats or sewing The next stage is regulated walking for varying distances at a pace adjusted to the patient's condition Then from mere walking, patients are promoted to carrying light baskets of stones or mold, which work respresents the first grade in outdoor labor Gardening follows in an ascending order until the strongest men do heavy work Thus, while the patients' lungs are healing their frames are built into a robust condition which renders them fit to work when discharged and more resistant to recurrence All the patients, whatever their previous vocations, can easily learn the simple sort of manual operations involved, but any special skill or aptitude possessed by individual patients is brought into play When a man is fit to be discharged he is set to work at his own trade, if he has one, for three weeks, so as to get the muscles in order to take up active life again The course for women is, within proper limits similar to that for men The hours for outdoor work are from 10 to 12 and from 3 to 5 In addition patients who are fit to do so, make their own beds, clean out their own rooms, wash their own dishes, etc The work is a remedy for the listlessness and ennui which are so common in sanatoriums The patients are interested in what they do and having something to show for their work derive a satisfaction which is absent when mere exercises are adopted They have transformed extensive grounds and converted a wilderness into a beautiful garden

VIENNA LETTER

(From our Regular Correspondent)

Vienna, July 27, 1907

Hospital Statistics

According to the figures of the bureau of statistics the number of beds available in the public hospitals and other charitable institutions in Austria is 37,610, or one bed for each 700 of the population These figures do not include institutions such as sanatoria, asylums for the insane nor maternity hospitals Comparison shows that 30 years ago the available beds numbered only 18,916, or a ratio of one bed for each 850 of the population As regards cost of maintenance of hospitals, this has increased in the last 30 years by 40 per cent Each patient now costs the state 36 cents daily

Poisoning by Caustic Potash Solution

The frequency of poisoning by means of caustic potash (common lye) was discussed at a meeting of the Vienna Medical Society recently, at the same time measures were considered whose adoption should restrict the large number of these accidents The chief causes of the accidents were the ease with which the poison could be obtained—for household purposes—and the lack of any pungent or disagreeable odor to warn those who inadvertently swallow the solution The concentration of the commercial solution varies from 7 per cent of the salt to 32 per cent The accidents usually befall children, who ignorantly taste or drink the liquid. There is no law forbidding the sale of this dangerous preparation to children In seven years 362 cases of injuries by this caustic alone have been collected from the Vienna hospitals Of these patients 18 6 per cent died, 10 per cent. had to be operated on, and of the survivors 93 per cent of the injuries resulted in permanent stricture of the esophagus, which in some cases proved fatal later The only way of preventing future accidents, or at least of rendering them less frequent, seems to be by prohibiting its sale except by registered druggists This would tend to awaken the public to the fact that the preparation is a dangerously toxic one

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Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters, that a teaspoon holds five cubic centimeters, i. e, more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses]

Pernicious Malarial Fever

Pernicious malarial fever rarely begins as such and is evidenced by the so called "congestive chill" This congestive chill occurs when there is an intense and profound chilling of the surface of the body causing a consequent dangerous congestion of the internal organs This is followed by an enormous rise of temperature, up to the danger point All this is due to an enormous number of red corpuscles being ruptured at once by the plasmodia so that such an anemia can occur as to leave less than a million red corpuscles per cubic millimeter The patient can die in the first congestive chill, often dies in the second, and probably never survives the third The symptoms during the chill are those of brain pressure as shown by coma, or there may be such congestion of the lungs as to interfere with respiration, or the heart may be so disturbed that death occurs from its failure, or there may be bloody urine from congested kidneys A pernicious chill can resemble apoplexy, or a diabetic or drug coma Children with such severe chills often have convulsions Other cases can resemble sunstroke on account of the hyperpyrexia Pernicious malarial fever rarely is such until after several attacks of milder chills

The diagnosis of pernicious malaria having been made, if the type can be ascertained by previous malarial chills having occurred, we know the length of time we have for the specific to act If the type is not known, no chances should be taken, but quinin should be administered both hypodermatically and by the mouth If there is sufficient time the quinin may be administered by the mouth in doses of from 20 to 30 grains (1 5 to 2 grams) five or six hours before the expected paroxysm, and smaller doses at other periods during the twenty-four hours

When quinin is given with a hypodermic syringe it should be injected intramuscularly, and probably but rarely intravenously When given intramuscularly (the most frequent method when the hypodermic syringe is used) it is a mistake to believe that in ordinary conditions it will be absorbed more rapidly than by the stomach By the intramuscular method however, there is no question that there is a reservoir of quinin for constant absorption for a number of hours During the first twenty-four hours, two or three injections, of from 6 to 8 grains (40 to 50 centigrams) each, should be given Later, probably, one injection a day is sufficient. With proper cleanliness and a proper solution of the most soluble salts abscesses will rarely be caused The best muscles for injection are the deltoid the biceps or the glutei.

The most soluble salts of quinin for hypodermatic use are the quinin and urea hydrochlorid, and the quinin bihydrochlorid (bimuriate), the latter is perhaps the better One cubic centimeter (15 minims) of water will dissolve 20 centigrams (3 grains) of either of these salts readily, and even 25 centigrams (4 grains), hence a loaded hypodermic syringe, viz., 2 cubic centimeters (30 minims) can allow the administration of 0 5 gram (8 grains) of the bihydrochlorid of quinin

The part selected for injection should be thoroughly cleansed and rendered aseptic The syringe should be aseptic, and the water used should be sterile, and abscesses or tetanus will not occur If swelling and inflammation take place at the site of the injection, a thick wet dressing of one part of alcohol to three parts of water, covered with rubber tissue or oil silk and kept in place by a bandage, will soon reduce it

Hemoglobinuric Fever

This severe type of malarial fever is, of course, recognized by blood appearing in the urine, this is always a dangerous symptom and shows that the malaria is of a pernicious type, consequently active treatment is indicated It has been the subject of considerable discussion as to whether or not quinin can cause hemoglobinuria, in other words, whether these hemoglobinuric attacks are caused by the quinin or by the disease

Dr William H Deaderick, Marianna, Ark. (The Journal A. M. A, June 1, 1907), states that hemoglobinuria denotes the inability of the liver to take care of the large number of broken down red corpuscles in a given time If at any time this destruction of red corpuscles is excessive, as occurs in malarial fever, and especially that variety which occurs in southern climates, the liver is unable to metabolize this enormous amount of hemoglobin and the surplus is passed off by the kidneys, and bloody urine is the result. Some individuals, even when the malarial fever is not severe, readily leak this blood from their kidneys and have hematuria or hemoglobinuria

Dr Deaderick says "Hemoglobinuric fever occurs as a rule in those who have dwelt in the endemic locality at least several months, and usually from two to four years, and in the majority of cases occurs in persons who have suffered from repeated attacks of malarial fever" He states that the form of parasite found in the great majority of cases is the estivo autumnal He thinks that quinin will probably never cause, and will often prevent hemoglobinuria, although it is certain that the majority of patients who have had hemoglobinuria have also previously taken quinin. This, however, is simply a case of *post hoc* and not *propter hoc*

Brem, in The Journal A. M. A., Dec 15, 1906, states that quinin should always be given in malarial hemoglobinuria, and that under its use the passage of blood by the kidneys will cease He gives quinin intramuscularly, and believes that the best results will be obtained by giving 10 grains intramuscularly every four hours, during the first forty eight hours, or 15 grains may be given for the first three or four injections Two different preparations of quinin have been used for intramuscular injections, the bihydrochlorid and the hydrochlorid with urea, the bihydrochlorid proving the less irritating and the less likely to cause abscess

On the other hand Ketchen, in the *British Med Jour*, Nov 10, 1906, states that he has seen quinin cause hemoglobinuria He thinks that malarial germs should be found in the blood before quinin is given, as there may be a separate parasite causing hemoglobinuric fever

The consensus of opinion, however, seems to be that quinin should certainly be given in hemoglobinuric fever, and hypodermatically It may also be stated that malarial germs may cause hemoglobinuric fever and still not be found in peripheral blood

Schropshire, writing in The Journal A. M. A., Sept. 5, 1903, says that in hemoglobinuric fever 40 grains of quinin *per diem* should be given hypodermatically or intravenously until the period of expected exacerbation is passed, half that dose until the time of several exacerbations have passed, then the drug discontinued for three or four days, but he would give 20 or 30 grains of quinin every four or five days for six weeks He would also combine the methylene blue treatment with the quinin, giving from 3 to 6 grains two or three times a day

The method of injecting quinin intramuscularly is above described under the heading of "Pernicious Malarial Fever" If it is deemed best to give quinin intravenously, as suggested by Schropshire, either the quinin and urea hydrochlorid or the quinin bihydrochlorid would best be dissolved in physiologic saline solution, viz, 0 9 of 1 per cent of sodium chlorid in distilled water

Remittent Malarial Fever

This is the estivoautumnal variety of malarial fever, and has often been called bilious remittent fever Several sets of the plasmodia of this special form of malaria are in the blood, and the sets of germs maturing at different times cause a more or less continuous fever A frequent use of the thermometer, however, will often show short periods without fever, and we may thus obtain an indication of the best time to administer the quinin, it being advantageous to give a large dose several hours before a periodical rise of temperature If no rhythm can be discovered with the thermometer, the quinin should be given regularly, with every other day a small dose of calomel

The quinin is best administered in elastic capsules, perhaps from 12 to 20 grains being given every twenty four hours, depending on the susceptibility of the patient to the drug, marked cinchonism being avoided The quinin should not be given on an empty stomach, milk being a very good menstruum for it [For methods of administering quinin, see The Journal A M A., Aug 3, 1907, page 428] The amount of quinin and the length of time it should be given in this disease depends largely on the locality in which the disease occurs, much larger doses being required to effect a cure in some regions than in others Salol or salicylic acid, used in small doses as a partial antiseptic to the upper part of the bowels, is of advantage, as owing to the congestion of the liver in this disease bile is imperfectly produced, and considerable bowel infection occurs If the every other day small dose of calomel does not work satisfactorily, a small dose of a saline laxative should be given Severe purging should not be caused, however, and the amount and frequency will depend on the condition of the patient

The temperature, the pulse, the mouth, the nutrition and the general hygiene are all to be watched and treated with the same care as in typhoid fever Remittent malarial fever is persistent and troublesome to treat, and under most favorable conditions, generally lasts from two to three weeks or longer It is a serious sickness, and should always be treated as such The convalescence is often protracted and requires tonics and the prolonged use of quinin, perhaps combined with small doses of arsenic, and often a change of air before health is completely restored

The salol is best given in capsules, put up dry, as

℞

	gm		
Phenylis salicylatis	6|	or	ʒiss

Fac capsulas 20 Sig A capsule every six hours

Salol should not be given if there is any kidney congestion.

A good tonic during convalescence is as follows

℞

	gm.		
Arseni trioxidi	|04	or	gr 2/3
Strychninæ sulphatis	|04		gr 2/3
Ferri reducti	1|		gr xv
Quininæ sulphatis	4|		ʒi

M. et fac capsulas 20 Sig. A capsule three times a day, after meals

Correspondence

Pseudo-Original Articles—The Case of Dr Arthur E Gue *

LIBRARY OF THE SURGEON GENERAL'S OFFICE.
WASHINGTON, D C, July 30, 1907

To the Editor —The library of the Surgeon's General's office of the War Department endeavors to index all original matter in medical periodicals, unless of an absolutely trifling nature As a matter of course, memory can not be relied on to determine whether an article has already been marked, and its inclusion by the editor of a periodical among "original articles" is, therefore, accepted Occasionally a paper appears in several journals marked as "original" in each, with no note to show that it has appeared or is to appear in any other As this practice causes useless work in carding until it is detected, and also smacks somewhat of disingenuousness, it is thought that a particularly glaring example will be of interest to your readers and to the editors of many medical journals The article in question is entitled "The Mechanical and Chemical Effect of Milk on the Human," by Arthur E Gue, of Detroit

Before the title became familiar to the eye and so instantly distinguished among the hundreds of articles marked daily for carding, the above named production was noted here during the last few months in the following publications, always included among "original articles"

1 *Chicago Medical Times,* 1907, xi, 204 207
2 *Colorado Medical Journal,* Denver 1907, xiii, 45-48
3 *Louisville Monthly Journal of Medicine and Surgery,* 1906 7, xiii, 367 369
4 *Medical Bulletin,* Philadelphia, 1907, xxix 168 171
5 *Medical Council,* Philadelphia, 1907, xii 138 140
6 *Milwaukee Medical Journal,* 1907, xv, 76 79
7 *Physician and Surgeon,* Detroit and Ann Arbor, 1907, xxix, 120-123
8 *Toledo Medical and Surgical Reporter,* 1907, xxxiii 161 163
9 *Virginia Medical Semi-Monthly,* Richmond, 1907, xii, 33 35

As soon as the opening words "Milk is the normal secretion of the mammary glands of mammals," etc., became as familiar as the first words of Genesis or of the Declaration of Independence, the weary examiners ceased to affix the mystic sign calling for carding, and so it is believed the article has escaped record in at least as many more journals as I have already named WALTER D MCCAW,
Major, Surgeon, U S Army, Librarian, S G O

[COMMENT Some time ago THE JOURNAL, under the heading "Cumbering the Record," editorially called attention to this same evil which was then rather prominent in medical literature, both here and abroad, viz, the reprinting of the same article in different medical publications, some in identical form, sometimes disguised in title

The instance of multiple publication referred to above by Major McCaw is not comparable in the number of journals utilized by many authors Some five years ago we called attention to an article written by a Dr H Plympton of Brooklyn, which appeared as original in some twenty eight different journals, including four weeklies However, the above paper was offered to THE JOURNAL and was refused, and probably Dr Gue sent his remarkable contribution to many journals that did not accept his offer and publish it

Undoubtedly this practice insures a wider circle of readers, but each needless repetition—and almost all such repetitions are needless enough—diminishes the value of the aggregate of the medical literature of the day, and it makes matters uncomfortable for the bibliographer If the titles are slightly changed, as is sometimes the case, a fraud is practically consummated on the medical reading public. Most of the transgressors are not among the eminent of the profession, but there are some honored names that are not specially honored by their multiple appearances in this way If an article is really valuable it will command attention and secure a wide circulation by reproduction in honest reprints and excerpts much better than by this multiplication of spurious first appearances It is also an imposition on medical editors and publishers, who are not desirous of publishing as original matter what has already appeared elsewhere The amount of set up matter that has to be "killed" on this account is not insignificant In fact, the practice is morally inexcusable As matters are and as our correspondent shows, it is still one of the standing evils in medical periodical literature —EDITOR]

Personal Surgical Errors

NEW YORK CITY, Aug 8, 1907

To the Editor —It is doubly gratifying to read such an article as that with the above title in THE JOURNAL, July 20 The world is full of honest men, but not so full of brave men, for it takes such a man to own and proclaim his mistakes publicly Among these errors is one to which I desire to call particular attention, namely, the employment of the catgut purse string suture in dealing with the stump of the amputated appendix The patient died suddenly on the third day The postmortem showed that the suture had given away, and that the bowel contents had escaped into the peritoneal cavity, causing the patient's death The author continues "I then commenced to use linen thread, many of these patients, however, complained so bitterly of pain in the region of the stump for several months that I later made use of two separate catgut sutures, the outer strand hardened either with formalin or chromic acid" In my opinion the operator has gone from one danger to another There is already a long list of accidents, a number of them fatal, from the use of this purse string suture method Since I read my paper before the Association in June, other cases have come to my knowledge If every operator were as courageous as Dr MacLaren, I doubt not that I could swell the list of accidents to a considerable extent

I earnestly call the attention of surgeons to what I believe to be a grave error in technic The simple silk or linen ligature applied to the stump, one quarter of an inch from the cecum, with disinfection, by carbolic acid, of the small bit of mucosa beyond the ligature, does away with the danger of hemorrhage, and, so far as I can inform myself, the danger of leakage I have failed to find a list of accidents from its employment As yet I have not a single one, and I have made wide inquiry, and I would be greatly obliged for any reports of such cases I am of the opinion that any method which requires the traumatism of a suture in the cecum, or in the stump of the appendix, is faulty in that it is entirely unnecessary, as well as unsafe, when compared to the ligature
JOHN A WYETH

Dr Knopf and Morphin in Tuberculosis.

NEW YORK, July 30, 1907

To the Editor —On the day following the meeting of the National Association for the Study and Prevention of Tuberculosis there appeared in the *Philadelphia North American* a sensational article, reporting that I advised the killing of dying consumptives quickly and painlessly by heavy doses of morphin, and that I admitted that it was my daily practice to do so It was furthermore said that there had been a bitter debate and that the session adjourned in confusion These false statements were copied by nearly all the newspapers in the United States, were cabled to Europe and made the rounds in the papers and magazines of England and the whole European continent In spite of explanations and denials I sent to the Associated Press, in spite of a strong letter written by Dr George Dock, the presiding officer of the meeting, and sent to the leading medical journals of America, giving the true version of my remarks, the false statement has continued to be published and republished and commented on to the great detriment of the anti tuberculosis crusade all over the world For example, ignorant consumptives in St Louis, who had read the sensational lie, refused the visit of the nurses sent to them by the Society for the Relief and Prevention of Tuberculosis The *St Louis Republic,* which published this item, said "Consumptives, since they read that report, apparently have a dread that the visit of the nurse may mean morphin to end their suffering" It thus became necessary to issue the following statement, by order of Prof Frank Billings, president of the National Association for the Study and Prevention of Tuberculosis

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*According to the American Medical Directory Dr Gue is a graduate of the Chicago Homeopathic Medical College, 1891

> Various daily newspapers published on May 8 what purported to be a report of the remarks of Dr S A. Knopf of New York before the National Association for the Study and Prevention of Tuberculosis in which he was made to say It is my practice and your sacred duty when you see a dying consumptive before you to give the sufferer *morphin* in plenty that the end may come quickly and painlessly
>
> No such statement was made by Dr Knopf, but since in spite of an immediate explicit denial by the doctor a great many newspapers in this country and Europe continue to publish the false report as authentic news Dr Frank Billings of Chicago president of the National Association for the Study and Prevention of Tuberculosis authorizes the *following* statement
>
> > Quite apart from the false position in which the speaker was placed and the injury done him the publication of such a piece of sensationalism can not fail to have a very deleterious effect on impressionable tuberculosis patients throughout the country and may keep others from seeking needed medical aid
>
> The following statement made by Prof George Dock of the University of Michigan who presided at the meeting at which Dr Knopf spoke, should preclude all further misunderstanding
>
> > I heard clearly what Dr Knopf said I am sure that I know what he meant, and am sure that everybody in the room must have understood what he said His words could not possibly be converted into the meaning given in the public press. It was perfectly clear that he meant to relieve patients in the last stages Everybody knows that this prolongs life, while making it very much easier for the patient.
>
> Livingston Farrand Executive Secretary

I had hoped that this statement would stop all further comments on and circulation of the sensational falsehood I confess that I have longed for the lie to die out, or, in spite of the loyalty manifested by my professional friends during these hours of trial, for which I beg them to accept my most heartfelt thanks, the ordeal had become almost unbearable

Equally untrue was the report of the alleged "adjournment in confusion" and the "lively and bitter debate" which followed Dr Flick's report, condemning the use of morphin and its compound In refutation of this reflection made by Mr Beamish on a body of scientific men, composed of many of the leading American physicians, who have devoted their lives to the study and prevention of tuberculosis, permit me to submit an extract from a letter which was received recently by Dr Joseph Walsh, the secretary of the section

> I was present as secretary of the section at which you spoke and instead of the section breaking up in confusion as was stated in the newspapers, the section closed in the perfectly regular way and your statement as generally understood by the medical men seemed to be generally agreed with.

I beg The Journal of the American Medical Association to publish and the medical press of the United States in general to copy this communication in the hope that it will help individual members of the profession to refute once for all the inconceivable proposition that any physician true to his calling could possibly propound such a doctrine as shortening the life of any patient entrusted to his care. To the individual members of the profession in this country and abroad I address a personal appeal to embrace every opportunity to disabuse any individual who may labor under the misapprehension that I or any other member of the American medical profession recommended shortening the lives of consumptives or any others by the administration of morphin, chloroform or any other drug I make this appeal not merely for my own sake, but, above all, for the sake of truth and for the sake of consumptive sufferers in this and in other countries

S A. Knopf

Queries and Minor Notes

STATUS OF HYOSCIN MORPHIN ANESTHESIA

Brooklyn N Y Aug 8 1907

To the Editor —In the July number of the *Therapeutic Gazette* I find an article taken from the *Medical Record* advocating the use of hyoscin morphin hypodermatically to relieve labor pains.

1 Will you tell me if it is considered safer than the scopolamin morphin preparation?

2 If you consider it safe what dosage would you advise, and how often repeated?

3 Do you consider the addition of cactin as in the Abbott Alkaloidal Co s tablet, of any decided benefit?

J A N

Answer.—The article referred to in the *Therapeutic Gazette* is an editorial abstract of an article which appeared in the *Medical Record* Jan 12, 1907 in which hyoscin morphin-cactin was advocated to relieve pain The *Therapeutic Gazette*, however wisely omitted mention of the cactin in its abstract The article in question by Dr W H Birchmore, bears all the earmarks of the class of articles known as writeups' We make this statement on the character of the article itself and partly because this author, whose name we are unable to find in any directory, seems to have the habit of writing articles favoring proprietary remedies We have a record of several, in some of which he praises other of Abbott s preparations

1 Since hyoscin and scopolamin are recognized as being practically identical both from a chemical and from a pharmacologic point of view the combination on the market as hyoscin morphin is presumably just as safe as, and no safer, and just as valuable as, and no more so than the scopolamin morphin combination which has been so much used in Germany, and to a less extent in this country during the last six years and concerning which a number of articles have appeared in The Journal.

2 Gauss (*Centbl of Gyn*, Jan 12, 1007), who has elaborated the technic of this use of scopolamin, gives as the initial dose 0 01 gm. (1/6 grain) of morphin and 0 003 gm (1/200 grain) of scopolamin and gives an additional dose of 0 00015 gm (1/400 grain) of scopolamin at the end of from 30 to 45 minutes if the patient shows signs of returning memory as tested by her recognition of some object or experience, and repeats this dose of scopolamin as often as is necessary to prevent the return of memory, but almost always without an additional dose of morphin Bass (*Münch med Wochschr*, March 12 1907), states that 0 01 gm (1/6 grain) of morphin and 0 0003 gm (1/200 grain) of scopolamin are sufficient and the results are not materially improved by increase of dose He reports the death of one child which he attributes to scopolamin (hyoscin) of which 0 00075 gm (1/90 grain) were injected into the mother

3 No Cactin is a proprietary article put out by the Abbott Alkaloidal Co and claimed by them to be a concentration—whatever that may mean—of *Cactus grandiflora*, which is usually designated by pharmacologists as inert

ROCHE S EMBROCATION

Easton, Pa. Aug 1, 1907

To the Editor —Can you give me the approximate composition of a preparation called Roche s Herbal Embrocation widely exploited for whooping cough and many other conditions and put on the market by E Fougera & Co of New York?

David H Ludlow

Answer —Roche s Embrocation is a nostrum and its exact composition is not known From published formulas it appears that it is prepared by digesting a fatty oil with asafetida The following formula for a similar preparation has been published Coarsely powdered asafetida and alkanet each 5 0 gm (75 grains), are digested with olive oil 180 gms (6 fluidounces) during eight days and then filtered. To the clear filtrate are added oil of caraway, oil of turpentine each 9 0 gm (2 25 fluidrams), oil of pine needles 1 2 gm (18 minims) and oil of bergamot 0 8 gm (12 minims) Another published formula directs that 2.5 gm (38 grains) asafetida be digested for a few hours with 60 gm (2 ounces) olive oil the clear oil is decanted and mixed with 2 gm (30 minims) each of oil of caraway and oil of turpentine, and a few drops of oil of bergamot.

CYSTOGEN

Clarkson, Ky Aug 6 1907

To the Editor —Will you kindly state whether or not the Council on Pharmacy and Chemistry has passed on the merits or demerits of the remedy called Cystogen made by the Cystogen Chemical Co St Louis It is claimed by the manufacturers that it is a remedy *per se* for cystitis They claim this remedy to be 'A definite chemical compound with the formula of $C_6H_{12}N_4$ and when eliminated by the kidneys it decomposes to some extent forming formaldehyd Will you kindly give your opinion as to the correctness of these claims?

B C Wilson

Answer —Cystogen is a trade name applied to hexamethylenamin (hexamethylenamina U S P) This article is included with the list of New and Non Official Remedies under the trade names formin methaform uriform and urotropin It has also been called hexamin hexacystin aminoform cystamin metramin vesalvin, urisol and gonocystin These products are chemically identical but vary widely in selling price Thus, the official hexamethylenamin is sold at about 20 cents an ounce while Cystogen is sold at $1 00 an ounce

LYSOL.

Lead S D, Aug 7 1907

To the Editor —Has there been published an analysis of Lysol? If so can you tell me the constituents?

F E. Clough.

Answer —Lysol is a solution of cresol in soft (green) soap the solution containing 50 per cent. of cresol and is practically identical with Liquor Cresolis Compositus U S P

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers U S Army, week ending Aug 10, 1907

Collins, C C and Whitmore, E R, asst. surgeons, appointed members of a board of officers to meet at Fort Riley, Kan for the examination of such officers as may be ordered before it to determine their fitness for promotion

Appel A H, deputy surgeon general, and Scott, G H, asst.-surgeon, appointed members of an army retiring board to meet at Denver

Buck, C D, asst surgeon assigned to duty as surgeon, U S Army transport *Crook*, sailing Aug 10, 1907 from San Francisco to Manila, P I On arrival at Manila will report to the commanding general Philippines Division for assignment to duty

Winter, F A, surgeon granted twenty days leave of absence

Wadhams F H asst. surgeon Fort Slocum N Y, Ruffner, E L, asst. surgeon Columbus Barracks O, Whitmore, E R, asst. surgeon, Fort Riley, Kan, Halloran, P S asst surgeon Fort Leavenworth Kan Krebs, L Le R asst surgeon, Fort Hancock N J, Phalen, J M asst. surgeon Fort Logan H Roots Ark and Billingslea C C asst surgeon Fort Myer Va, are relieved from duty at the posts designated after their names, and will proceed to San Francisco and take transport to sail from that place about Oct. 5, 1907 for the Philippine Islands On arrival at Manila they will report in person to the commanding general, Philippines Division, for assignment to duty

Porter R S and Duncan W A, asst. surgeons, relieved from duty in the Philippines Division, to take effect at such time as will enable them to sail from Manila about Oct 15 1907 for San Francisco reporting on arrival by telegraph to the Adjutant General of the Army for further orders

Farr C W asst surgeon leave of absence extended two months

Rich E W asst-surgeon reports for duty at target range, Williamsburg, Va Left Camp Capt John Smith, Jamestown Exposition, Va same date

Leeper J F, contract surgeon left Army General Hospital, Fort Bayard N M on sick leave of absence for three months

Dickenson C F, contract surgeon arrived July 28 at San Francisco on the transport *Buford* for leave of absence for one month

Treuholtz C A, contract surgeon, left Army General Hospital, Fort Bayard N M on leave of absence for two months

Ashburn, J K, contract surgeon, granted leave of absence for ten day

de Quevedo, L G, contract surgeon, granted leave of absence for two months

Hutson, T O, contract surgeon granted leave of absence for ten days

Kress C C contract surgeon, granted an extension of ten days to his leave of absence

Patterson E W, contract surgeon, and Mason G L, dental surgeon sailed on the *Logan* August 5, from San Francisco, for Philippine service

Hollingsworth R M, dental surgeon sailed on the *Warren*, August 5, from San Francisco for Philippine service

Redewill, F H, contract surgeon, granted leave of absence for ten days

Huber, E G, contract surgeon ordered from Fort Snelling, Minn, to Fort Assinniboine Mont for temporary duty

Long C J dental surgeon granted leave of absence from August 12 to September 5 inclusive ordered to sail from San Francisco for Philippine service, September 5

Navy Changes

List of changes in the Medical Corps, U S Navy, for the week ending Aug 10 1907

(Order issued by commanding general Army of Cuban Pacification) Mears J B asst surgeon granted leave for one month under exceptional circumstances with permission to visit the United States to take effect about July 30, 1907

Melhorn K C and Biello J A acting asst surgeons, appointed acting asst surgeons from Aug 2 1907

Clifford, A B, asst surgeon, ordered to the *Maryland*

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Aug 7 1907

Pettus W J asst surgeon general, granted leave of absence for twenty six days from Aug 12 1907

Wickes H W P A surgeon granted leave of absence for one month from Aug 7 1907

Wilson R L P A surgeon directed to proceed to Fountainbleau Miss for special temporary duty completion of which to rejoin his station at New Orleans

Bahrenburg L P H P A surgeon granted leave of absence for seven days from July 15, 1907, under Paragrapn 191 Service Regulations

Robertson H McG asst surgeon granted leave of absence for five days from July 25 1907, under Paragraph 191 Service Regulations

Mullan E H asst surgeon relieved from duty at Perth Amboy quarantine station and directed to proceed to Ellis Island for duty

Wollenburg R A C asst surgeon relieved from duty at Detroit, Mich and directed to proceed to Ellis Island for duty

Herring R A asst surgeon granted leave of absence for one day in July 1907 under Paragraph 191 Service Regulations

Porter J Y sanitary inspector directed to proceed to Fernandina Mayport Carrabelle and Santa Rosa for special temporary duty on completion of which to rejoint his station at Key West Fla

Delgado J M acting asst surgeon granted leave of absence for one day in July 1907 under Paragraph 210 Service Regulations

Duffy, Francis acting asst-surgeon granted leave of absence for six days, from Aug 5 1907

Elfers J C acting asst surgeon, granted leave of absence for twenty days from Aug 3 1907

Hicks B I, acting asst. surgeon, granted leave of absence for twelve days, from Aug 4 1907

O Reilly W J, acting asst surgeon granted leave of absence for eight days from Aug 8, 1907

Savage, W L, acting asst surgeon, granted leave of absence for thirty days, from Aug 4 1907

Schwartz Louis acting asst surgeon, granted leave of absence for one day in July, 1907, under Paragraph 210 Service Regulations

Simonson G T acting asst surgeon granted leave of absence for ten days, from Aug 5 1907

Wetmore W O acting asst surgeon granted leave of absence for seven days, from July 7, 1907, under Paragraph 210, Service Regulations

APPOINTMENT

Dr Rhoderick W Browne appointed an acting asst surgeon for duty at Norfolk, Va., Aug 7, 1907

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended Aug 9, 1907

SMALLPOX—UNITED STATES

Alaska St. Michael May 26, 1 case (from vessel)

Illinois Aurora June 1 July 27, 55 cases, Mechanicsburg, January 10-August 1 10 cases

Iowa Davenport July 1 31, 7 cases

Kentucky Lexington, July 20 27, 1 case, Louisville, July 25 August 1, 1 case

Louisiana New Orleans July 20 27, 1 case (imported)

Missouri St Joseph July 20 27 2 cases

New York Buffalo, July 29 2 cases

Ohio Hamilton March 29 June 15, 21 cases

Pennsylvania Philadelphia July 6-13 1 case

Washington Spokane, July 6 27, 11 cases (1 imported), Tacoma July 13 20 2 cases

Wisconsin Milwaukee, July 20 27, 5 cases

SMALLPOX—FOREIGN

Brazil Rio de Janeiro June 16-July 7, 7 cases 2 deaths

Canada Winnipeg, July 20 27 1 case

China Shanghai, June 15 22, 4 cases (foreign), 47 deaths (native)

Egypt Cairo June 3 July 8 4 cases 2 deaths

Columbia Barranquilla July 24, present

India Calcutta, June 15 22, 12 deaths, Madras, June 15 July 5 3 deaths

Luxemburg June 22 July 6 1 case

Madeira Funchal, July 14 21, 40 cases 3 deaths

Mexico Aguas Calientes July 20 27, 5 deaths

Russia Libau June 22 July 13, 3 cases, Riga, April 1 30, 12 deaths July 6 13, 6 cases

Spain Barcelona, July 10 20, 2 deaths, Valencia, July 1 31 12 cases, 3 deaths

Turkey Bassorah, June 22 29, present, Damascus, June 29 July 6, present

YELLOW FEVER

Brazil Rio de Janeiro June 16 June 30, 4 cases, 2 deaths

Columbia Barranquilla May 27 1 case 1 death

Cuba Matanzas August 4 6 1 case 1 death

West Indies Trinidad, Port of Spain, June 29 July 13, 3 cases 1 death

CHOLERA.

India Bombay, June 25 July 2 1 death, Calcutta June 15 July 22, 44 deaths, Rangoon June 22 29, 4 deaths, Kashmir, June 18 24, 1,149 cases, 879 deaths

PLAGUE

Africa King William's Town June 15 22, 1 case

Brazil Rio de Janeiro June 16 July 7, 7 cases, 1 death

China Amoy, July 27, present

Egypt Alexandria July 11 18 13 cases 8 deaths Port Said July 11 18, 1 case 1 death Behera Province, July 1 18, 1 case, 1 death Beni Souef, July 11 18 2 cases

Formosa June 22 29 86 cases 77 deaths

India General June 8 15 21 647 cases 19 934 deaths Bombay June 25 July 2 27 deaths, Calcutta, June 15 22 25 deaths Rangoon June 22 29 51 deaths

Persia Island of Bahrein June 19, epidemic Mohammerah June 19 present

Marriages

Samuel J Terrill, M D, to Miss Mertie Orr, both of Meta Mo, at Clayton, Mo, July 29

D Earl Musgrave, M.D, to Miss Eliza Flournoy Wood, both of Standard, W Va, August 7

Jane Elizabeth Hoyt, M D Concord, N H, to George W Stevens of Claremont, N H, June 26

Oscar Edwin Fox M D, Reading Pa, to Miss Alice Sylvia Hunt of Asbury Park, N J, August 1

Walter H Allyn M D, Waverly, Ill, to Miss Helen MacMillan Hawley of Chicago, Ill August 1

Robert Morrison, M D, Sheraden, Pa, to Miss Rosetta Ryan of Cambridge Springs, Pa, August 7

Francis Swift Bourns, M.D, Seattle, Wash, to Miss Mary Catherine Doyle of Goderich, Ont., July 10

James B Shively, M.D, Shippensburg, Pa, to Miss Nellie G Caldwell of Pittsburg, at Carlisle, Pa, July 31

Lieut William Hadley Richardson, assistant surgeon, U S Army, to Miss Alice Huey Goodin, at Fern Bank, Ohio, July 18

La Barre Jayne Leamy, M.D, Philadelphia, to Miss Beatrice P McGill Polphine of Media, Pa, at Wilmington, Del, June 30

Deaths

Benjamin Grinell Strong, M.D University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1883, for many years a practitioner of Long Island City, N Y, and coroner's physician of the Borough of Queens, for several terms coroner of Queens County, and a member of the staff of St John's Hospital, Long Island City, died at his old home in Reading, Mich, from tuberculosis, July 26, after an illness of two years, aged 46 At a meeting of the Medical Society of Long Island City, held July 29, resolutions of sorrow and sympathy were adopted

Edward W Lee, M.D, L.R C P Ireland, Dublin, 1862, a member of the Illinois State and Cook County and Chicago medical societies, for many years a well known surgeon of Chicago, and for 20 years chief surgeon of the Pennsylvania Lines west of Pittsburg and attending surgeon to the Cook County Hospital and other institutions, died at his home in Chicago, August 11, aged 67

Silas Scarboro, M.D University of Maryland School of Medicine, Baltimore, 1857, from 1863 to 1864 assistant surgeon of the Second Maryland Infantry, U S V, and invalided in 1864, a member of the Maryland House of Delegates from 1878 to 1882, and at one time a member of the Harford County school board, died at his home in Towson, Md, August 7, aged 80

Hamilton Osgood (Years of Practice, Mass), a member of the Massachusetts State and Suffolk County medical societies, for many years a practitioner of Boston, and at one time a member of the staff of the *Boston Medical and Surgical Journal*, an early student of hypnotism and suggestive therapeutics, died in Oxford, Eng, July 10, aged 68

James Marcellus Hopkins Bateman, M.D University of Maryland School of Medicine, Baltimore, 1867, formerly president of the State Board of Health of Maryland, a member of the State Board of Medical Examiners, and local surgeon of the Pennsylvania System, died at his home in Easton, Md, from nephritis, August 2, aged 62

Thomas H Sabin, M.D Medical Department of the University of Wooster, Cleveland, Ohio, 1882, a veteran of the Civil War and an organizer of a cavalry company in the Spanish American War, at one time physician to the Indian School at Sacaton, Ariz, died at his home in Casa Grande, Ariz, July 29, from heart disease, aged 63

Andrew Dunbar Forsythe, M.D Hospital College of Medicine, Louisville, Ky, 1897, a member of the Medical Association of the District of Columbia, for ten years a practitioner of Washington, D C died in the Georgetown University Hospital, in that city, July 30, from peritonitis, after an illness of five days, aged 33

Thomas Boyers Brown, M.D Medical Department of the University of Nashville, Tenn, 1898, a member of the Tennessee State Medical Association and Sumner County Medical Society died at his home near Gallatin, July 30, from peritonitis following typhoid fever, after an illness of two weeks, aged 32

Leo W Sapp, M.D Cleveland University of Medicine and Surgery, 1856, one of the founders of the Huron Road Hospital Cleveland and for many years a member of the faculty of Western Reserve University Medical College, died at his home in Cleveland, August 4, after an illness of two months, aged 74

George H Stanley, M D Medical School of Harvard University Boston, 1870, health officer of Pawtucket, R I, for several years a member of the Rhode Island and Providence County medical societies died at his home in Pawtucket, R I, July 20 from ptomain poisoning, after an illness of one week, aged 61

John G Geers, M D Miami Medical College, Cincinnati, 1876, for 30 years a practitioner of West Point, Iowa, mayor of the city in 1902 and 1903, a member of the school board for many years, and a member of the Iowa State and Lee County medical societies, died in a hospital in St Louis, July 30, aged 53

James F Canavan, M.D University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1899, a member of the Michigan State and Grand Traverse County medical societies, first assistant physician at the Northern Michigan Asylum, Traverse City, died from appendicitis, July 26, aged 31

Clarke C Campbell, M D Jefferson Medical College, Philadelphia, 1846, surgeon of the Fifth Texas Volunteers, C S A., during the Civil War, afterward in charge of the City Hospital Galveston, city physician of that city for three terms, died at his home in Fort Worth, July 27, aged 82

Edward G Ferguson, M D Faculty of Medicine of Queen's University, Kingston, Ont, 1863, at one time a professor in the Macon (Ga) Medical College, and a prominent practitioner of that city for many years, died at Indian Springs, Ga, July 25, after an illness of two years, aged 65

Christian E Burkeholder, M D Rush Medical College, Chicago, 1890, of Jacksonville, Ill, a member of the Illinois State and Morgan County medical societies, died at Our Saviour's Hospital, Jacksonville, July 28, two days after an operation for strangulated umbilical hernia, aged 31

Wilson J Flinn, M D Northwestern University Medical School, Chicago, 1891, a practitioner of Blaine, Kan, and for two terms coroner of Pottawatomie County, died at the home of his mother in Holton Kan, August 1, from gallstone disease, after a prolonged illness, aged 45

Winfield Scott Stone, M D Louisville, (Ky) Medical College, 1874, a veteran of the Civil War, some-time township treasurer, and for nine years a member of the school board of Caledonia, Ohio, died at his home in that village, August 1, from neuritis, aged 61

A Dow Coburn, M.D McGill University Medical Faculty, Montreal, 1892, a practitioner of Canterbury, N B, died at the home of his mother in Fredericton, N B, July 25, from tuberculosis, after an illness of more than a year, aged 36

Charles A. Zimmerman, M.D Curtis Physio Medical Institute, Marion, Ind, 1896, some time professor of electrotherapeutics in his alma mater, died suddenly at his home in Fort Wayne, Ind, from angina pectoris, July 29, aged 62

Leonard S Taylor, M.D Bennett College of Eclectic Medicine and Surgery, Chicago, 1891, died at his home in Elgin, August 5, from septicemia, due to an operation wound, after an illness of several months, aged 39

Edwin B Crisswell, M.D Cleveland Homeopathic Medical College, 1883, of Edwardsburg, Ind, who was injured in a fall from a street car in Elkhart, August 2, died in that city, August 6, aged 49

Adolph Goldsmith, M.D Missouri Medical College, St Louis, 1885, a practitioner of St Louis until he became an invalid, in 1895, died at the Missouri Baptist Sanitarium, St Louis, July 30 aged 48

Charles Neill, M.D Toronto University, 1893, a native of Barry, Ont, died recently in Chicago, while on his way for his health to Texas, after an illness of about five years, from tuberculosis

John Paxon, M.D University of Pennsylvania, Department of Medicine, Philadelphia, 1860, died at his home in Newtown, Pa, June 3, from cerebral hemorrhage, aged 65

Thomas Watson Howard (Examination Russell Co, Ala, 1888), died at his home in Girard, Ala, July 31, from uremia, after an illness of ten days, aged 65

Samuel Wimpelberg, M.D Jefferson Medical College, Philadelphia, 1883, of Yonkers, N Y, died suddenly in Roosevelt Hospital, New York City, July 12

Alexander M Veasey, M.D Kentucky School of Medicine, Louisville, 1886, formerly of Pittsburg, Pa, died at his home in Medora, Ind., July 28

Marshall Dennis Kelley, M D University of Nashville (Tenn) Medical Department, 1857, died at his home in Nashville, July 7, aged 76

Thomas J Prim (Examination, Clark Co, Ala), 1884, died at his home in Salipta, Ala, recently, from fever, after a short illness

John McMillan, M.D McGill University Medical Faculty, Montreal, 1857, died at his home in Picton, N S, May 1, aged 73

James Dudley Mosher, M.D College of Physicians and Surgeons, Baltimore, 1886, died at his home in Rawdons, N S, May 4.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE INSURANCE FEES, MEDICAL LEGISLATION, ETC

Then and Now

In a letter recently received from the secretary of one of the most active county societies in an eastern state appear some observations which are worthy of repetition as emphasizing specifically a fact which has been repeatedly stated in a general way Our correspondent says

> For all I heard while at medical college, I would never have known that the ethics of practice of medicine differed in the least from that of selling swine Nor did I learn that there was such an association as the American Medical Association, *nor that it published a journal* However, I had run across that grand book of Cathell's and did not know that something was required of a doctor After locating and beginning practice, I became a subscriber to the ———— *Medical Journal* One day, in reading an advertisement of a book, I saw a review copied from "The Journal of the American Medical Association" *For the first time I knew there was such an* Association, and I knew at once that I wanted to belong to it I had no idea where the headquarters were, but thought that they might be in Philadelphia I wrote to Philadelphia, and, of course, my letter came back I finally wrote to ———— *and found that the headquarters were in Chicago* I wrote to headquarters and asked what was necessary to become a member, and was told that I must be a member of the West Virginia State Medical Association This was the first time that I had ever heard of such an association, and did not know how to join or whom to ask Finally, I met Dr ———— of ————, *and asked him if he knew anything about the* West Virginia State Medical Association and how I could become a member He said there were only two doctors within miles of his house who were members and that he was one He gave me the address of the secretary and endorsed my application, and in this way I became a member of the state *association and of the American Medical Association*
>
> Now, some one was to blame for this The college should have drilled it into me that there were such associations and that it was my duty and privilege to become a member of them The American Medical Association should have had some literature in my hands during my first student year *The State Medical Society should have sent me invitation* after invitation to become a member as soon as I located in the state They should have kept it up until I joined I feel safe in asserting that no doctor in my county can say that he does not know how to become a member of his county *medical society Thinking of how little has been done for the average doctor, the wonder is not that we are better but* that we are not worse

Our correspondent's criticisms were unfortunately true Medical colleges, even the best, formerly neglected the practical side of a student's training in professional matters As a result, students were allowed to enter practice with no knowledge of their relations to their future patients to their professional brethren or to the public They knew nothing of what has been done by the organized profession in the past They know nothing of the influence, possibilities or duties of the profession as a whole

There has been some improvement, however, Since 1900 the American Medical Association each year has sent to every medical college enough copies of the Principles of Medical Ethics of the Association *to supply one copy for each graduate of the school In some of our more progressive colleges, prominent members of the faculty have given talks to the graduating classes on the practical side of medicine, the advantages of medical organization, etc* If our correspondent had been a member of the class of 1907 instead of 1897 he would have known something about the Principles of Medical Ethics and the American Medical Association before he graduated

There has been a change, too, in medical organization work in the state We venture to say that there are few, if any, reputable physicians now practicing in our correspondent's state who have not been invited to join their county and state societies Along these lines there has been much improvement in the last five years *Of course, there is room for still more*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Massachusetts Board of Registration in Medicine, State House Boston September 10 12 Secretary, Dr Edwin B Harvey, 159 State House Boston

Iowa State Board of Medical Examiners, Capitol Building Des Moines, September 17 19 Secretary, Dr Louis A Thomas Des Moines

STATE BOARD REPORTS

Reference Table of Published Reports of State Boards of Medical Examiners

Some reports of examinations held in various states are given in this issue To facilitate reference to other reports previously published, the following table will be found of value

State	Date of Exam	Journal Page	Journal Date	With Examination Questions
Arizona	January	1293	April 13	No
	April	265	July 20	No
	July	436	August 3	No
Arkansas	January	1973	June 8	No
	April	436	August 3	No
California	December	824	March 2	Yes
	April	350	July 27	No
Colorado	January	2109	June 29	No
	April	182	July 13	No
Connecticut	November	258	January 19	No
	January	349	July 27	No
	March	349	July 27	No
Delaware	December	365	January 26	Yes
	June	351	July 27	No
Dist. of Columbia	October	168	January 12	No
	January	1293	April 13	No
Florida	May	518	August 10	No
Georgia	October	638	February 16	No
	April	350	July 27	No
	May	350	July 27	No
Idaho	October	257	January 19	No
	April	436	August 3	No
Illinois	October	448	February 2	No
	January	1974	June 8	No
	April	350	July 27	No
	May	350	July 27	No
Indiana	October	724	February 23	No
Iowa	December	638	February 16	No
	May	518	August 10	No
	June	518	August 10	No
Kentucky	October	257	January 19	No
	April	1974	June 8	No
Louisiana	October	258	January 19	No
	May	264	July 20	No
Maryland	December	724	February 23	Yes
	June	351	July 27	No
Massachusetts	November	258	January 19	No
	March	181	July 13	No
	May	351	July 27	No
Michigan	October	168	January 12	No
Minnesota	January	726	February 23	No
	April	265	July 20	No
Mississippi	October	258	January 19	No
Missouri	November	825	March 2	No
Montana	April	1974	June 8	No
Nebraska	February	182	July 13	No
Nevada	November	258	January 19	No
	May	182	July 13	No
North Dakota	January	541	February 9	No
	April	1700	May 18	No
	July	436	August 3	No
Ohio	December	449	February 2	No
Oklahoma	December	825	March 2	Yes
Rhode Island	January	726	February 23	No
	April	1974	June 8	No
	July	519	August 10	No
South Carolina	June	264	July 20	No
South Dakota	January	1293	April 13	No
Texas	April	517	August 10	Yes
	October	449	February 2	No
Utah	January	726	February 23	No
	April	1974	June 8	No
Vermont	January	1544	May 4	No
Washington	January	182	July 13	Yes
West Virginia	November	259	January 19	No
	April	1974	June 8	No
Wisconsin	January	1974	June 8	No
	April	519	August 10	No
	June	519	August 10	No
Wyoming	December	365	January 26	No
	March	1629	May 11	No
	June	436	August 3	No

Minnesota June Report—Dr W S Fullerton secretary of the *Minnesota State Board of Medical Examiners*, reports the written examination held at St Paul June 4 7 1907 The number of subjects examined in was 15 total number of questions asked, 120 percentage required to pass 75 The total number of candidates examined was 68, of whom 50 passed and *18 failed Seven reciprocal licenses were granted* The following colleges were represented

PASSED

College.	Year of Graduation	Medicine	Surgery	Obst. and Gynecology	Materia Medica	Anatomy and Histology	Physiology	Chem., Tox. & Urinalysis	Pathology & Bacteriology	Prev. Med. & Med. Jurisp.	General Average
Bennett Coll. of Ecl. M. & S	1907	81	75	83	76	81	78	75	83	76	79
College of P and S., Chicago	1907	74	77	75	75	75	76	60	94	77	75 8
College of P and S., Chicago	1907	82	83	82	77	80	80	80	88	70	80 2
Rush Medical College	1907	82	75	87	83	77	84	76	87	77	80 8
Northwestern University	1907	84	81	81	69	89	85	75	92	78	81 5
University of Minnesota.	1907	83	82	81	75	93	86	76	88	78	82 4
University of Minnesota.	1907	79	75	75	75	80	76	62	85	70	75 2
University of Minnesota.	1907	83	81	91	88	80	81	80	95	79	84 2
University of Minnesota.	1907	77	78	83	76	83	81	78	88	78	80 2
University of Minnesota.	1907	78	75	84	82	91	84	78	84	79	79 4
University of Minnesota.	1907	86	75	80	77	78	80	66	95	77	79 3
University of Minnesota.	1907	88	82	79	67	86	80	76	91	78	80 7
University of Minnesota.	1907	88	77	80	74	81	83	72	86	81	80 2
University of Minnesota.	1907	88	85	94	76	77	90	75	90	82	83
University of Minnesota.	1907	85	82	83	71	82	83	70	83	80	79 8
University of Minnesota	1907	83	75	78	68	83	82	76	82	70	77 4
University of Minnesota	1907	85	76	84	86	82	80	81	89	79	82 4
University of Minnesota.	1907	77	72	78	81	70	69	79	78	77	75 6
University of Minnesota	1907	80	80	80	68	72	75	60	81	79	75
University of Minnesota.	1907	78	80	80	66	75	75	77	86	77	77 1
University of Minnesota.	1907	80	77	81	71	61	68	77	87	77	75 4
University of Minnesota.	1907	71	70	83	87	79	78	65	79	78	76 6
University of Minnesota.	1907	84	80	88	82	85	79	79	83	77	81 8
University of Minnesota.	1907	79	71	83	67	79	76	77	88	77	77 4
University of Minnesota.	1907	81	77	79	67	76	87	72	72	78	76.5
University of Minnesota	1907	81	78	80	77	58	75	80	71	76	75 1
University of Minnesota.	1907	77	69	75	81	79	69	60	87	78	75
University of Minnesota.	1907	81	81	75	77	91	83	75	82	76	80 1
University of Minnesota	1907	72	70	79	72	94	81	63	72	78	75 6
University of Minnesota.	1907	79	75	81	65	78	65	64	84	76	76 3
University of Minnesota.	1907	82	75	81	73	75	82	78	86	80	78 7
University of Minnesota.	1907	87	85	94	87	84	91	86	91	79	88 2
University of Minnesota.	1907	86	83	88	90	79	93	77	91	82	85 4
University of Minnesota	1906	79	68	79	78	81	77	75	88	80	78 3
University of Minnesota.	1906	83	78	81	72	77	75	68	84	77	77 2
University of Minnesota	1906	85	80	85	75	82	87	79	92	77	82.4
University of Minnesota	1906	91	83	92	83	91	79	78	81	81	83 2
Hamline University	1907	85	85	83	88	72	80	79	94	80	82 7
Hamline University	1907	80	77	80	80	66	76	71	71	74	75
Hamline University	1907	79	82	77	84	83	84	79	92	75	81 6
Hamline University	1907	83	80	83	80	85	80	79	76	77	81 3
Hamline University	1907	85	78	79	85	77	83	79	85	80	81 2
Hamline University	1907	72	75	83	75	79	75	58	82	76	75
Hamline University	1907	80	82	79	93	75	87	73	93	79	83.2
Hamline University	1907	77	78	73	89	72	75	71	86	75	77 3
Hamline University	1907	81	77	68	79	76	73	61	85	75	75
Hamline University	1907	87	83	89	88	94	93	80	90	86	88
Hamline University	1906	77	89	82	75	84	76	64	84	76	77 4
Hamline University	1906	80	76	66	75	83	75	67	86	75	75 8
Medical Coll. of Ohio	1890	90	82	90	84	87	90	71	70	80	82 6

FAILED

College.	Year of Graduation	Medicine	Surgery	Obst. and Gynecology	Materia Medica	Anatomy and Histology	Physiology	Chem., Tox. & Urinalysis	Pathology & Bacteriology	Prev. Med. & Med. Jurisp.	General Average
University of Minnesota	1907	78	75	75	60	70	75	66	83	76	73 1
University of Minnesota	1907	80	61	72	69	75	69	53	77	74	70
University of Minnesota.	1907	69	75	78	85	80	64	42	74	70	71 7
University of Minnesota.	1907	77	63	75	67	75	77	64	75	70	71 4
University of Minnesota.	1907	75	82	78	61	78	66	45	70	75	70
University of Minnesota	1906	72	62	76	66	70	69	74	71	76	70 6
Hamline University	1907	78	70	65	67	76	67	71	67	77	70 8
Hamline University	1907	73	70	71	75	50	76	58	74	63	68 8
Hamline University	1907	75	64	71	71	70	60	72	59	77	68 7
Hamline University	1907	74	65	63	86	65	60	66	73	75	69 6
Hamline University	1907	72	69	44	72	88	82	66	75	78	71 7
Hamline University	1906	67	61	66	61	58	65	69	68	76	65 6
Hamline University	1906	68	75	71	63	75	80	56	70	74	70 2
Hamline University	1908	67	67	62	84	62	75	62	88	75	71 3
University of Buffalo	1885	68	73	64	75	76	75	50	65	79	69 3
University of Buffalo	1892	21	21	41	25	00	59	00	42	67	30 6
Eclectic Med. Inst. Cincinnati	1907	66	78	79	66	72	75	30	66	79	68 8
Univ. of Toronto, Ontario	1906	54	51	59	59	78	75	66	53	75	63 8

LICENSED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with.
Colorado School of Medicine	(1904)	Texas
Rush Medical College	(1871)	Iowa
Medical College of Indiana	(1885)	Nebraska
Sioux City College of Medicine	(1906)	Iowa
University of Michigan	(1905)	Iowa
Albany Medical College	(1887)	Wisconsin
Wisconsin College of P and S	(1905)	Wisconsin

The following questions were asked

CHEMISTRY

1 Define (a) specific gravity (b) oxidation (c) a base (d) synthesis (e) an element (f) allotropy 2 (a) Give the law of multiple proportions (b) give the difference between a chemical compound and a mechanical mixture 3 (a) Give a test for organic matter in drinking water (b) what substances are commonly found in solution 4 Explain the action of alcohol immediately applied to a carbolic acid burn. 5 Give metals of the alkali group with symbols 6 (a) Give freezing point of blood (b) give test for blood pigment (c) how do you estimate the hemoglobin 7 (a) What is the chemical composition of the different urinary calculi, (b) name members of the purin group 8 (a) Give a qualitative test for lactic and hydrochloric acids in stomach contents (b) what is meant by total acidity 9 (a) Name the carbohydrates found in the urine (b) give a color test for diabetic blood. 10 Give qualitative test for uric acid, (b) give qualitative test for urea

SURGERY

1 Give symptoms and differential diagnosis of dislocation of the ankle 2 Give differential diagnosis and treatment of fracture of lower end of femur 3 Give etiology, pathology and clinical course of acute infective osteomyelitis 4 Give differential diagnosis, clinical course and treatment of gonorrheal arthritis 5 Give symptoms and differential diagnosis of vesical calculus 6 Give technic of circumcision 7 Define sapremia, septicemia and pyemia 8 Give method of ligating brachial artery at middle of arm and name structures to be avoided 9 Give treatment of corneal ulcer 10 Describe trachoma and give treatment

OBSTETRICS

1 Describe the superior strait and give its dimensions 2 Give classification of labor as to presentation and position 3 Give treatment for the nausea and vomiting of pregnancy 4 Give diagnostic signs of death of fetus in utero 5 Give diagnosis and management of hydrocephalus in labor 6 Enumerate the various malpresentations and describe your management of a case of shoulder presentation 7 Give your management of a case of complete placenta prævia the os being rigid and the cervical canal not readily penetrated. 8 Give etiology and treatment of phlegmasia alba dolens 9 Give causes and treatment of subinvolution of the uterus following confinement. 10 Give indications for craniotomy, Cesarean section and Porro operation.

MATERIA MEDICA.

1 Incompatibility (a) explain the term as used in materia medica (b) give general principles 2 (a) What is carbolic acid, (b) criticise the following

℞	Acid carbolic, liq	
	Sodii bicarb	Drachm ss
	Gentian fluidext.	Drachm v
	Aq aurantii flor, q s. ad	Oz. i
M.	Sig Half an ounce in a little water to be taken three times a day before meals	O i

3 Cocain (a) Source? (b) Physical properties? (c) Local action On the eye (conjunctiva and pupil?) Hypodermically? (d) Constitutional action On nervous centers? On respiration? On temperature? (e) Routes through which it enters the circulation? Single dose to exceed which is dangerous? 4 (a) Name two reliable tenicides State the preparation of each commonly used and give dosage (b) name three reliable heart stimulants (c) three hypnotics (d) a drug which stimulates reflex activity of the spinal cord (e) three depressants of spinal cord activity 5 Give the derivation of—(a) arbutin (b) apiol (c) apomorphin, (d) brucin (e) cicutin (f) eserin (g) hydrastin (h) emetin (i) scopolamin (j) veratrin 6 Veratrum viride (a) Source? (b) Chief physiologic action? (c) Official preparations with dose? (d) Principal alkaloids? 7 Give the average adult dose of the official fluidextracts in general Name the exceptions in which this would be a dangerous dose and state average dose of each exception 8 (a) What is massa hydrargyri? Mercurous chlorid? Mercuric chlorid? (b) Explain how ferrous carbonate is obtained in Blaud's pill 9 Name the medicines which have become established as specifics and the disease in which each is so used 10 State a safe dosage rule where prescribing for children

PRACTICE OF MEDICINE.

1 Give causes and symptoms of gastralgia 2 Describe a case of multiple neuritis 3 Describe seborrhea oleosa seborrhea sicca. 4 Give symptoms and treatment of acute prostatitis 5 Give causes and symptoms of pulmonary emphysema 6 Give causes and symptoms of acute endocarditis 7 Give general management of sunstroke What are its most important sequelæ? 8 Give general causes and symptoms of neurasthenia 9 Give symptoms of chronic parenchymatous nephritis including results of chemical and microscopic analysis of urine 10 Name at least four of the principal diseases in which we usually find enlargement of the spleen, not including primary disease of the organ itself

GYNECOLOGY

1 Give diagnosis and treatment of pyosalpinx. 2 What abnormal condition of the uterus may produce dysmenorrhea? 3 Enumerate all the subjective and objective symptoms of tubal pregnancy 4 Describe your management of a case of abortion with severe hemorrhage 5 Describe treatment for posterior displacement of uterus

DISEASES OF CHILDREN

1 Give etiology symptoms and treatment of mycotic stomatitis. 2 Give etiology and symptoms of rachitis 3 Give pathology and symptoms of infantile palsy 4 Enumerate causes of infantile convulsions 5 Describe a case of spina bifida.

TOXICOLOGY

1 (a) Define poison antidote (b) classify antidotes according to action (c) give composition of an effective antidote to be used where no definite information can be obtained as to poison taken and explain action 2 Resolve treatment of poisoning into routine steps in the order of importance 3 Give symptoms and treatment of poisoning by strychnin Give physiologic test where strychnia is suspected as the lethal agent 4 Name three commercial articles in common use which are frequent sources of arsenical poisoning (b) symptoms of (c) antidotes 5 Describe Reinsch's test and the method of differentiating between arsenic, mercury and antimony 6 How is death produced in poisoning by aconite? by digitalis? by morphin? by hydrocyanic acid? by nicotin? 7 Given a poisonous dose of morphin in a susceptible subject describe the symptoms of poisoning in order of occurrence 8 Describe fully how you would treat such a case 9 Differentiate between alcoholic narcosis morphin poisoning and cerebral hemorrhage. 10 What are ptomains?

MEDICAL DIAGNOSIS

1 (a) Name the casts in the urine (b) give their significance (c) give the clinical sognificance of albuminuria. 2 Differentiate

general tuberculosis and typhoid fever 3 Given a case of aortic stenosis, how would you know it? 4 Show value of a leucocyte count in a questionable case of typhoid fever or appendicitis. 5 In what diseases would you use the microscope to make or confirm a diagnosis 6 Differentiate the different throat exudates and state with what diseases they are commonly associated 7 In a case of edema of the legs, what would you look for? Show by elimination 8 (a) What is Kernig s sign, von Graefe s sign, Dietl s crisis Argyll Robertson pupil, Koplik s spots Romberg s symptom McBurney's point? Give significance and value in diagnosis ()b Give diagnostic value of lumbar puncture 9 Name the differential diagnostic points in 'paresis" 10 (a) What conditions simulate gallstone colic and how do you differentiate? (b) Diagnostic value of the determination of hydrochloric acid in stomach contents.

MEDICAL JURISPRUDENCE.

1 (a) What is meant by presumption of death and of survivorship? (b) How are such questions usually decided? 2 What is the cause of death following burns? 3 What are the most characteristic signs of death by drowning? 4 How do you distinguish between intellectual and moral insanity? 5 Give some conditions legally justifying the induction of premature delivery

PREVENTIVE MEDICINE

1 What in your opinion is the best procedure to prevent the spread of tuberculosis? 2 Describe some practical method whereby a tubercular patient, confined to the house, may get a good supply of pure air 3 How are the following diseases usually transmitted Typhoid fever, yellow fever, malaria, tuberculosis and diphtheria? 4 (a) What are the dangers from impure drinking water? (b) Give practical method for obtaining pure water for the home. 5 What in your opinion is the most sanitary method of heating and ventilating a dwelling in this c mate during the winter season?

PATHOLOGY

1 What are the pathologic changes in the blood in (a) pernicious anemia (b) chlorosis 2 Give gross and microscopic appearance of interstitial hepatitis 3 Give pathology of cystic ovary 4 Give forms and pathology of appendicitis 5 Give pathology of poliomyelitis

BACTERIOLOGY

1 In what infectious diseases is immunization of value 2 Describe the malarial organism 3 Describe and give method of staining (a) tubercle bacillus (b) gonococcus 4 Describe Widal's test and how it is made 4 Describe method for bacteriologic diagnosis of diphtheria

ANATOMY AND HISTOLOGY

1 (a) Describe the kidney, (b) give the histology of the kidney 2 (a) Describe the spleen, (b) give the histology of the spleen 3 (a) Describe the thyroid gland, (b) give the histology of the thyroid gland 4 If you were to remove the superficial layer of lymphatics from the neck, what structures would you meet and what would you unavoidably sever in so doing? 5 Describe the triangles of the neck 6 Describe the muscles of respiration 7 Describe the saphenous vein and give its relations 8 Describe the internal iliac artery and give its relations 9 Describe the external iliac artery and give its relations. 10 Describe the brachial artery and its relations

PHYSIOLOGY

1 Describe the functions of the liver and the uses of the bile. 2 Explain the secretion of urine by the glomeruli and renal epithelium 3 Describe in detail a complete cardiac revolution and enumerate the causes of the normal heart sounds 4 Describe the formation of a blood clot 5 What is the function of the lymphatic system? What is (a) lymph and (b) chyle? How is the movement of the lymph maintained? 6 Describe the change which the blood undergoes in passing through the capillaries of the skin and lungs 7 What are the sources of heat in the animal body and by what means is it regulated? 8 Explain the physiologic phenomena that take place in ankle clonus 9 Describe the changes the food (albuminous foods starches and fats) undergoes in the duodenum and explain how it is absorbed by the lacteal and portal vein 10 What is the function of the spinal cord? What centers are located in it? Note Credits will be given for all diagrams used in explaining questions

California Examining Board Report—A number of interesting points are to be found in Dr Dudley Tait's report to the California State Medical Society last April (*California State Journal of Medicine*, June, page 128) Control of matriculation requirements in California are where they properly belong, in the hands of the State Board of Medical Examiners Dr Tait says "There is no more radical method of exterminating the purely mercenary medical college than by exacting of all matriculants a high standard of preliminary education" One California college had in 1905 6, 42 freshmen, but in 1906-7, when an examiner from the board passed on the credentials of matriculants, the standard of requirement being the same, the number of freshmen was 7, a reduction of 83 3 per cent Regarding the laws of California regulating medical practice, the act of 1901 was obtained only by allowing a special act for the osteopaths The result was that, although the number of licentiates for the regular, homeopathic and eclectic schools was materially reduced, the osteopathic board registered large numbers and these without examinations Further, among those registered by the osteopathic board there were many who had failed ignominiously before the medical board Only recently the osteopaths declared openly that their ambition was "to be known as practitioners of medicine in the broad sense of the term" While higher requirements were being demanded of the three schools of medicine there was a wide door by which the illiterate could enter into the practice of medicine Hence the new law, although it was not what could be termed ideal, was imperatively demanded Dr Tait rightfully urges the cooperation of all reputable physicians with the examining board toward the enforcement of the new law against illegal practitioners The experience of California in regard to the osteopaths emphasizes what is now coming to be better appreciated That there should be no class legislation or special privileges for any individual who desires to practice medicine in any form Let them all enter by the same door and comply with the same standards of preliminary and medical education

Texas June Report—Dr T T Jackson, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 25 27, 1907 The number of subjects examined in was 12, total number of questions asked, 144, percentage required to pass, 75 The total number of candidates examined was 93, of whom 73 passed, including 31 non graduates, and 20 failed, including 17 non graduates The following colleges were represented

PASSED

College	Year Grad	Per Cent
Howard University Washington	(1907)	78
College of P and S Chicago	(1905)	80
Keokuk Med Coll College of P and S	(1906)	87
Hospital Coll of Medicine Louisville	(1905) 80, (1907)	80, 80
Kentucky School of Medicine	(1894)	75
Tulane University of Louisiana	(1907)	78, 78, 79 79 7, 80, 82
University of Iowa	(1889)	84
Maryland Medical College	(1905) 86 5, (1907)	87 5
St Louis University	(1907)	84, 86 5
St. Louis College of P and S	(1898)	79
University of Nashville	(1907)	82
Vanderbilt University	(1900) 83, (1907)	85, 91 4
Memphis Hospital Medical College	(1898) 75 (1905)	83
University of Texas	(1904) 80, (1906) 92, (1907)	84, 84 8, 86 5, 87, 87 5, 87 6, 88, 88 5, 89, 89 89 6, 90, 90, 91, 94

FAILED

Kentucky University	(1906)	68 5
Flint Medical College	(1907)	67 7
Meharry Medical College	(1906)	69 7

Pharmacology

ANOTHER CONSUMPTION CURE (?)

The C S Roberts and Hyoscine Attempt to Exploit the Tuberculous

We have had occasion to comment on the diabolical cruelty exhibited by cancer fakers in deluding their victims with false hopes and by inducing them to delay such treatment as might be effective until too late Next to cancer, tuberculosis offers the most promising field for such vampires, for it is a disease in which the patient is always hopeful and always ready to say that he is better, just such a condition as makes him an easy victim for those who are without principle and ever ready to prey on the hope which springs eternal in the human breast

During the past three months, physicians all over the country have been receiving postal cards announcing the discovery of a new and wonderful remedy for consumption The card is signed, "C S Roberts, M.D, Member N Y State Medical Society and American Medical Association" It is to be regretted that what Roberts says regarding his membership is true Until within the last few months Roberts lived at Syracuse, N Y, and is a member of the Onondaga County Medical Society and consequently of the Medical Society of the State of New York Last December he became a member of the American Medical Association This was just before his removal to New York City, and he evidently obtained this membership because he was going into this wretched business and wanted to use his membership as an apparent guarantee of his ethical standing As soon as the Onondaga County Medical Society discovered the business Roberts had gone into he was asked to resign, but this he refused to do Hence it became necessary for the society to go through the legal form of trial before expelling him from the society We understand that his trial can not come off until September, and that Roberts is fighting to retain his membership

According to the postal card, Roberts is "just commencing to introduce to the medical profession (on strictly ethical lines)", this is put in parenthesis probably for emphasis, "a positive cure for tuberculosis in any form" "This discovery," he says, "is the result of fourteen years' scientific study and experimentation," but so far as we have been able to learn, Roberts has not been noted as performing any remarkable cures of tuberculosis in Syracuse, nor was it known that he was using this wonderful remedy The last paragraph of the postal card is supposed to be a clincher

"Doctor, a trial will prevent your tubercular patients from saving your neighbor doctor is curing his patients in a few weeks right at home, while you are sending them at great expense in time and money to the remote resorts for consumptives"

Judging from the circulars, Roberts seems to have gone to New York to help exploit a nostrum—hydrocine—put out by the "Medical Food Co," and evidently the postal card is the initial move in a scheme to exploit the medical profession.

Incidentally, it might be said that some two or three years ago Roberts was interested in a scheme to work the doctors by getting them to invest in a water still, and the circular letters he sent to physicians at that time sound very similar to the circulars he is now sending out puffing this specific for consumption In one of the "still" letters[1] he states that he made $3 200 in less than two months on an investment of $300 Evidently something must have happened to the "still" business for such a man would hardly give up a business netting $2,900 in two months, even to exploit a remedy that is to relieve the human race of one of its most fatal diseases

The recipient of the postal card above referred to is told that if he will send 15 cents in postage stamps he will be furnished with the "theory, literature and abundant testimonials and a $3 size sample to prove what we say" This part of the agreement is lived up to The theory is furnished, plenty of literature including testimonials, and also a box of the tablets The theory ought to take with an ignorant layman, and the literature certainly is promising and hopeful enough to convince the most desperate individual that he could be cured.

The wonderful remedy is known as hydrocine—hyper oxidized hydro carbon The circular tells us that "the physician is unquestionably entitled to a full, frank and candid statement of the composition, nature and character of any and every medicinal preparation he is asked to prescribe." This sounds excellent, and then follows the formula

FORMULA.

Hyper-oxidized hydro-carbon (vegetable)	28	gr
Pure Rock Sugar	8	gr
Powdered Pancreatin	1 20	gr

The oxids are liberated in the stomach and thrown into the circulation

It is barely possible that there is somebody on this mundane sphere that can tell what "hyper oxidized hydro carbon (vegetable)" is Most of us have a knowledge of pure rock sugar and powdered pancreatin, but when we come to the other ingredient, we fear the majority of us would have to give it up

However, we find this in the printed circular

"The hydro carbon is extracted from oils of cinnamon, conium peppermint, spruce, myrtle, chekan, marrubium, myrrh, turpentine and thymol, is then condensed, and positively all toxic properties are eliminated The residue is hyper oxidized, predigested by pancreatin, mixed with a small quantity of powdered rock sugar and pressed into 30 grain tablets"

There we have it And when we have it, what have we?

The literature is of the usual quackish order, the optimistic kind that will make the physician who does not stop to think feel that it is something worth trying at least

Of course, there are testimonials—several of them What nostrum was ever introduced, whether to the public or to the profession, that did not have testimonials ready? Many of the testimonial givers we have not located, but they may be genuine for all that One who speaks in high praise of the nostrum is Dr O P Barber of Saginaw Mich, who is given as "professor of surgery, Michigan College of Medicine and Surgery, Detroit, Mich" Dr Barber's success is really remarkable when it is considered that he disregarded Dr Roberts' instruction to select an incipient case, for he seems to have taken one with extensive cavities, in the third stage, a man with undoubted complications, whose sputum was so offensive that the doctor asked him to expectorate in the closet in the next room. He also neglected to give a "good liver cathartic at the start," as the circular advises, but put him at once on hydrocine Possibly Dr Barber did not carry out the full instructions because he did not get them from the right source, for he tells us that he was led to use the remedy on the advice of a layman, from whom he seems to have obtained his early supplies However, notwithstanding these palpable violations of the correct method of using the preparation, this unpromising patient recovered to such an extent that the cavities all filled up and over 40 per cent of the patient's lung consists of scars This was proved by the x ray Dr Barber had other equally remarkable cures

Another name that is often seen in a certain class of literature appears in connection with this hydrocine This is Dr J W P Smithwick, of LaGrange, N C Dr Smithwick, however, is given to writing very favorably of preparations that are not in the Pharmacopeia, such as glycobenphene, borobenphene, tongaline, bromidia, maltopepsine, ecthol, phenalgin, dermapurine, Angier's petroleum emulsion, thialion, etc, for we find his testimonials in the advertising literature of all of these articles Dr Smithwick, who, by the way, is given as "first vice president of the American Congress on Tuberculosis," and therefore should be an authority on the subject, seems also to have had a most notable experience, for every patient treated recovered, and his cases included not only pulmonary tuberculosis, but also hipjoint disease, lupus vulgaris, etc., and of the worst sort

When we began to receive Roberts' postal cards and were asked to show up the scheme, we thought the card itself was so quackish that no intelligent physician would risk even the 15 cents It seems, however, that some have been "almost persuaded," and we have been astonished to receive letters asking if it is not possible that this nostrum may do what its promoters say it will do, evidently feeling that possibly after all, the long looked-for remedy has been discovered. How foolish! If Roberts and the promoters (who are, perhaps, making him a cat's paw) really had a remedy that would do what they claim this one will do, there would not be words in the English language strong enough to characterize their villainy and inhumanity in keeping it secret. If, on the other hand, the stuff is a fraud, then it is simply another instance to add to the list of attempts to humbug the public, and to make money out of their suffering Either horn of the dilemma is certainly reprehensible, and to have one who is supposed to have once been a reputable physician mixed up in it should be a source of regret to every member of our profession.

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[1] The following is a copy of a circular letter imitation typewritten sent out by Roberts The physician to whom it was addressed said This is the third letter I have received from Dr Roberts in the past few weeks none of which I have answered

Syracuse N Y Nov 20 1904

Dear Doctor —My letters to you of recent date may have found you busy with your own affairs they may have found their way into your waste basket (never to return with any profit to you) However permit me to say I meant well and hoped to favor you

You may be interested in knowing that my profits since being interested in this company (September 29) on an investment of $300 have been $3 200

I will state for your information Doctor that one of the four ways in which to make money on this proposition by associating with this company to the extent of $300 to $500 (and this amount is all you can invest with them) is by the sale of their Automatic Water Still in your county by any method you may choose to adopt for a period of 15 years

This Still is the greatest household device I ever saw It requires no more room than and can be used as an ordinary tea kettle and does not require as much watching and care The water is boiled and the steam condensed in the presence of pure hot air giving the most pure and live water entirely free from the taste of ordinary boiled or distilled water I know of no water for table use so nice and pleasant to the taste The Still is capable of distilling several gallons per day The price is reasonable and within the reach of everybody and one should be in the home of every family in your town and you can do your patients no greater favor than recommending one of these to them

This Water Still has been endorsed by every board of health where sold and by all physicians who have seen it

Why not accept the company's liberal offer to pay your fare one way for the purpose of an investigation If this business was not high class and worthy they certainly would not make you such terms

If at all interested please let me hear from you for further information or I will arrange for your transportation to Rochester Very truly yours

C S ROBERTS

56 Surgical Treatment of Goiter—Tinker discusses the clinical history of goiter, and emphasizes the importance of early diagnosis and the value of operation in such cases He says that reports of cases treated by medical measures alone show a death rate higher than those in which operation is done, and this in spite of the fact that usually only the most unfavorable cases have been submitted to excision. Operative measures have cured or relieved a proportionately larger number of patients than any other treatments In view of these facts, Tinker says that all patients resisting the approved therapeutic measures should be urged to consult a competent surgeon

57 Tendon Transplantation in Talipes—Ashhurst believes in tendon transplantation in the treatment of selected cases of congenital and acquired talipes In infantile palsy he insists that as a rule from one to two years should be allowed to elapse between the onset of the paralysis and the resort to tendon transplantation, the paralyzed muscles being treated by means of massage and electricity in the meantime In congenital clubfoot Ashhurst considers it safer to allow a longer period to elapse before resorting to tendon transplantation He uses chromicized catgut and makes a mattress suture He does a periosteal transplantation Six typical cases are reported

58 Gunshot Wounds of Abdomen—Vaughan adds three cases to his series of 14 reported previously In one of the cases there were ten perforations in the small intestine (the ileum), and two in the bladder Six of the perforations were closed with silk sutures, and two inches of bowel, containing the remaining four sutures, were resected. One opening in the bladder was closed The other opening was so deep in the pelvis as to be inaccessible, without opening the bladder and suturing it from the inside Rather than do this, permanent drainage was provided to the bladder, and the patient eventually made a complete recovery In the second case, nine holes were found in the bowel, distributed through about the last seven feet of the ileum, and two in the bladder All the holes were closed with silk sutures, the abdominal cavity was thoroughly irrigated with salt solution and closed with drainage The patient died from peritonitis 26 hours afterward In the third case the liver, stomach, pancreas and kidney were injured No irrigation was used, the blood and clots were simply sponged out and the abdomen was closed without drainage About two months after the operation an abscess formed in connection with the pancreas This was opened and drained The discharge continued for five weeks, when it ceased, and the opening healed

60 Influence of Tuberculous Ancestry on Prognosis—It is shown by von Ruck that the indications point in favor of the view that the mere fact of a tuberculous family history being shown in an individual case will not diminish the patient's chances of recovery

61 Adenoids and Adenoid Tuberculosis—White examined 75 adenoids histologically and found that primary tuberculosis occurs in about 5 per cent of all the cases He says that tuberculosis, therefore, is not an important factor in the production of adenoid hypertrophy, but that in the development of pulmonary tuberculosis adenoids may sometimes be direct channels of infection Their importance, however, is probably more often indirect by predisposing to catarrhal inflammations of the upper respiratory tract Adenoids and tonsils are considered important channels of infection in tuberculosis of the cervical glands

62 Congenital Laryngeal Stridor—Reardon reports one case, which is made the basis of a very full discussion of the clinical history of this affection.

65 Chronic External Ophthalmoplegia—Posey reports one case of this affection, the patient being a girl, 16 years of age Both eyes were fixed, the right eye looking straight ahead, with the left slightly divergent, and all motion was abolished, except when the patient was requested to look down Ptosis to a marked degree existed on both sides The thyroid was normal, and there was no enlargement of the hands and feet The pupils reacted to light and accommodation stimuli In the right eye vision equaled 5/9 and in the left eye it equaled 5/7

University of Pennsylvania Medical Bulletin, Philadelphia.

June

67 Opsonins and Vaccines as Applied to Surgical Therapy D H Bergey, Philadelphia
68 *Copper in Human Liver L A. Ryan Philadelphia.
69 *Coagulability of Blood in Disease M Solis Cohen, Philadelphia.
70 *Improved Method of Staining Fibroglia, Myoglia, Myofibrillæ of Striped Muscle, etc. A F Coca

68 Copper in Liver—Ryan says that there can be no question but that copper is a constant constituent of liver tissue, although it is by no means established that it is a normal necessary constituent, but rather what may be termed an accidental constituent, derived from copper containing foodstuffs. When absorbed into the animal circulation copper forms stable albumin copper salts, especially in the liver, where probably it is stored as a nucleinate of copper, because of the stability of these salts the copper is excreted exceedingly slowly

69 Coagulability of Blood in Disease—Solis Cohen made 65 observations with practically negative and unsatisfactory results Each disease did not seem to have a certain definite clotting time, the average period was about the same in the different diseases In a given disease, and even in the same patient, the clotting time varied greatly, the variations having no relation to the degree of the patient's temperature, to the character of the food or of the drugs administered, to the time of day the observations were made, or to their relation to meal time The results obtained by other investigators could not be confirmed.

70 Improved Method of Staining—The steps of the method employed by Coca for staining fibroglia, myoglia, etc, are as follows 1 Zenker fixation 2 Paraffin sections at 5 micra or less 3 Removal of paraffin, etc, to 95 per cent alcohol 4 Ninety-five per cent alcohol containing 1 per cent iodin, five to ten minutes 5 Directly into water without previous removal of the iodin 6 Concentrated aqueous solution of magentarot (Grübler), fifteen minutes 7 Rinse in water 8 Three to five minutes in the following Indigo carmin (Grübler), 0 75 grm, saturated aqueous picric acid, 100 c.c, distilled water, 100 c c 9 Differentiate in 95 per cent alcohol one to two minutes 10 Absolute alcohol, one minute 11 Xylol, balsam

Archives of Pediatrics, New York

July

71 *Study of Conditions of Osteomyelitis in Young Children by Roentgen ray T M Rotch and A W George, Boston
72 *Status Lymphaticus and Enlargement of Thymus treated with Roentgen ray A Friedlander Cincinnati
73 *Pneumococcus Arthritis in Infants and Children A F Furrer, Cleveland
74 *Eclampsia of Mother as Cause of Early Nephritis in Child C G Grulee Chicago
75 *Study of Hospital and Dispensary Milk in Warm Weather J H M Knox, Jr and E H Schorer Baltimore
76 *Suggestions for Reducing Infant Mortality from Summer Diarrhea C Herrman New York
75 *Study of Hospital and Dispensary Milk in Warm Weather Croupous Pneumonia D J M Miller, Philadelphia

71—See abstract in THE JOURNAL, July 6, 1907, page 69

72 Enlargement of Thymus—Friedlander reports one case of status lymphaticus with enlargement of the thymus gland that yielded to treatment with the Roentgen ray after other treatment had failed to produce other results

73 Pneumococcus Arthritis—Furrer reports a case of pneumococcus arthritis occurring in an infant 10 months old The right elbow was first affected, and then the left knee The bacteriologic examination of pus taken from the elbow showed a pure culture of an organism resembling Fraenkel's diplococcus Animal inoculations were not made Later the patient developed pneumonia and then symptoms pointing to an abscess in the liver The infant died, having lived six months after the original joint infection A necropsy was not made Furrer also tabulates 26 previously reported cases of pneumococcus arthritis occurring in infants and children

74 Eclampsia of Mother and Nephritis in Child—Grulee reports a case, a study of which leads him to believe that it is justifiable to regard eclampsia in the mother as one of the causes of the so called idiopathic nephritis, encountered in children

75 **Hospital and Dispensary Work.**—The study of milk carried on by Knox and Schorer emphasizes the importance of pasteurizing all milk designed for infant feeding during the summer months The authors urge that pasteurization should be done as soon as possible after the milk is produced.

76 **Reducing Infant Mortality from Summer Diarrhea.**—Herrman urges instructing the mothers of the very poor in the duties of the expectant mother, and in the feeding of infants

Northwest Medicine, Seattle

July

78 Leprosy as Seen by the Hawaiian Practitioner P R Wang hop Seattle Wash.
79 Clinical Course and Treatment of Pleurisy J Sutherland, Spokane Wash
80 Opsonic Index in Tuberculosis. W R. M Kellogg, Seattle
81 *Case of Congenital Exomphalic Hernia C. N Suttner, Walla Walla, Wash.

81 **Congenital Exomphalic Hernia**—In the case reported by Suttner the intestine, stomach and liver were outside of the body, simply covered by peritoneum and the attenuated splanchnopleure The deficiency in the abdominal wall extended from one half inch of the ensiform cartilage to within one inch of the symphysis pubis The structures were replaced in the abdomen, the liver being retained in place with two sutures, and the opening was closed with 28 sutures The wound healed by first intention, and the child was well at the time of writing

California State Journal of Medicine, San Francisco

July

83 *Ischemic Paralysis and Contracture Treated by Bone Shortening T W Huntington, San Francisco
84 Amplitude of Accommodation at Different Periods of Life and Its Relation to Eyestrain E Jackson, Denver, Colo
85 *Aneurism of the Left Ventricle. W C Voorsanger, San Francisco
86 Dermoids of Scalp R Brown Santa Barbara.
87 Gonorrheal Conjunctivitis. M E. Hart, New York.
88 Differential Diagnosis of Organic from Functional Dyspepsia. D Fulton, Los Angeles
89 Effect of Chemicals on the Heart Nerves W E Garrey, San Francisco
90 Throat Infections of Childhood S T Pope, Watsonville, Cal

83 **Ischemic Paralysis and Contracture**—In a case of this kind Huntington resected one and one eighth inches of the ulna and radius at about the upper part of the lower two thirds The bones were wired together The wounds healed well and bony union was complete at about the end of two months At present, the range of motion in the hands and fingers is fully if not more than one half normal.

85 **Aneurism of Left Ventricle**—In Voorsanger's case there was a cavity with a fibrous rim, just under the chordæ tendineæ, about 8 c.c from the apex This cavity contained a large clot The valves were all normal, except the mitral, which contained a few thickenings The pathologic diagnosis in the case was hydrothorax pericarditis, mitral insufficiency, hypertrophy of left ventricle, dilatation of right ventricle, aneurism of the left ventricle in the upper third near the auricle

Montreal Medical Journal.

July

91 *Excision of Cecum for Carcinoma O M Jones Victoria, B C.
92 Life and Works of Sir Almroth Edward Wright, with Reference to Opsonic Treatment. G D J Lannin
93 *A Prolonged Fast. A. A. Martin Montreal
94 Traumatic Asphyxia C K P Henry Montreal

91 **Excision of Cecum for Carcinoma**—Jones reports five cases and points out particularly the difficulty of making an early diagnosis He excises the cecum and unites the colon to the ileum One man is alive and well, six years after the operation Two of the patients died, one twelve months after the operation and the other one month after operation

93 **Prolonged Fast.**—Martin describes his experiences during a nine days' fast, when he partook of no nourishment whatever, though he drank freely of what water he desired, about three ordinary tumblerfuls a day Various tests were made by fellow physicians, and the result is carefully recorded.

New Orleans Medical and Surgical Journal

August

95 Ergot and Quinin as Oxytocics. L. M Griffin Oakley La
96 Rosacea of the Chin and Nose. J V Shoemaker Philadelphia.
97 Epilepsy from Hydrocephalus after Complete Ossification of Cranial Bones. F. M Robinson Birmingham Ala.
98 Treatment of Chronic Heart Disease J B Elliott Jr New Orleans, La
99 Diagnosis of Cardiac Diseases T Ragan and S L White Ruston, La.
100 *Atropin in Acute Intestinal Disturbances. C W Allen
101 Etiologic Factors in Insanity E M Hummel, Jackson, La
102 Some Things the General Practitioner Can and Should Do with the Stomach Tube J T Halsey
103 *Detection and Significance of Occult Blood in Feces and Stomach Contents J A Storck, New Orleans.

100 **Atropin in Acute Intestinal Disturbances**—In three cases of polyp and one of acute intestinal indigestion, Allen employed successfully 1/50 grain of atropin In one case three doses were given, with an hour interval between each Another patient received about ⅛ of a grain during five or six hours

103 **Occult Blood**—Storck emphasizes the importance of detecting occult blood in the stomach contents and in the feces, and commends Adler's benzidin test, which is conducted as follows The sample of feces or stomach contents is stirred with water to a thick paste About 4 or 5 c c. are then placed in a test tube, and 1 c c. of glacial acetic acid is added After shaking the tube, 2 c c of a freshly prepared concentrated solution of pure benzidin in 90 per cent alcohol, heated, are added, with an equal amount of hydrogen dioxid If there are even minimal traces of blood, the color turns, almost at once, a deep green, which passes into a bluish green if there is much blood In the presence of very large quantities of blood, the color is almost black The tint gradually fades into a dirty brown This test is more easily applied than either the aloin or guaiac test, and is much more sensitive, being in the ratio of 1 to 200, or against 1 to 10,000 in the guaiac and aloin tests

Journal of the Arkansas Medical Society, Little Rock.

June

104 *President's Address, Ark Med Soc C T Drennen, Hot Springs Ark.
105 Value of Organization in Medicine. J A Wyeth, New York
106 *The Medicine of the Physician C S N Hallberg Chicago

104—See abstract in The Journal, June 22, 1907, page 2145

106—See abstract in The Journal, June 22, 1907, page 2148

Journal of Kansas Medical Society, Columbus

June

107 President's Address, Kansas Medical Society L L Uhls, Osawatomie Kan
108 Value of Blood Examination in Children. M. T Sudler, Lawrence
109 Nystagmus J S Wever, Kansas City, Mo

The Medical Fortnightly, St Louis

June 25

110 A Definition of Life W. W Crane, Sinclair, Ill
111 Dermatologic Axioms. N. E Aronstam, Detroit.
112 Opsonic Treatment of Bacterial Diseases. O H Brown, St. Louis

Colorado Medicine, Denver

June

113 The Doctor and the Public. E Stuver, Fort Collins Colo
114 The Physician in Politics C F Andrew Longmont, Colo
115 Congenital Hypertrophic Stenosis of the Pylorus C B Lyman Denver
116 Gastroenterostomy I B Perkins, Denver, Colo

Southern California Practitioner, Los Angeles

June.

117 Syphilis of the Mouth G MacGowan, Los Angeles Cal
118 Primary Angina Ludovici H A Kiefer and R Hagan, Los Angeles.
119 Prevention of Tuberculosis Venereal Diseases and Alcoholism G H Kress Los Angeles
120 Plastic Surgery of the Mouth C D Lockwood Pasadena Cal
121 Prevention of Insanity F E Corey Alhambra Cal
122 The More Important Cerebral Lesions W H Dudley Los Angeles.

American Medicine, Philadelphia.

June

123 Therapeutics of Bright's Disease Based on Its Etiology W H Porter, New York.
124 Metabolic Aspects of Overfeeding and Underfeeding R. W Webster Chicago
125 Necessity for Routine Examination of Ear Drums of Children with Fever W B Hoag New York.
126 Modern Development of Physical Methods of Healing A N Baer Milwaukee Wis
127 Diagnosis in Intussusception. M M. Hull Atlanta, Ga.
128 Bacteriologic Studies of Smegma R C Rosenberger, Philadelphia.
129 Drainage in Treatment of Acute Appendicitis. J G Sheldon Kansas City Mo
130 Abnormal Lactation J Knott, Dublin Ireland.
131 Serum Therapy in Exophthalmic Goiter A. Heineberg, Philadelphia.

The Columbus Medical Journal

June

132 Injuries and Foreign Bodies of the Ear, Nose and Throat T V Fitzpatrick Cincinnati
133 Training Schools for Nurses in Hospitals for the Insane I A Bradley Columbus, O
134 Teaching of Biologic Subjects in the Colleges of Liberal Arts and Science in Ohio S R Williams, Oxford O
135 What Should be the Requirements to Gain One Year s Advanced Standing in the Medical Colleges of Ohio I U Barnhill, Columbus, O
136 Place of Materia Medica in the Curriculum J G Spenzer, Delaware, O
137 Teaching of Chemistry in Colleges of Liberal Arts and Science in Ohio J G Spenzer, Delaware, O

FOREIGN

Titles marked with an asterisk (*) are abstracted below Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

July 20

1 *Vibrating Sensations in Diseases of the Nervous System R T Williamson
2 Spa Treatment of Neurasthenia E J Cave
3 Laryngismus Stridulus in New born Infants E Smith
4 *Value of Rhythymical Exercises in Treatment of Spasmodic Neuroses T S Wilson
5 *Educational Aspect of the Cancer Question C P Childe.
6 *Possible Clue to Solution of the Cancer Problem C G Mackay
7 *Inflammatory Changes in Posterior Spinal Root Ganglia in Cases of Cutaneous Cancer G L. Cheatle
8 *Case of Streptococcic Conjunctivitis H H B Cunningham
9 Bodies Found in Ticks F C. Wellman
10 Iodin and Typhoid G V Perez
11 Simultaneous Dislocation of Both Shoulders M J Lyden
12 A Fifteen Pint Hydrocele A E Horn

1 Vibrating Sensation in Diseases of Nervous System.—In the investigations he has made, both on the well and the sick, Williamson made use of a tuning fork nine inches long and its prongs five and a half inches long He has found this as useful, practically, as the more delicate and more powerful instrument He claims that the vibrating sensation is a delicate test for detecting slight impairment of sensation, although the vibrating sensation may be lost, when other forms of sensation are felt, or are only very slightly impaired This is sometimes the case in early tabes, in slight peripheral neuritis, and often in diabetes mellitus In diseases strictly limited to the motor structures, the vibrating sensation is not lost, even at an advanced period of the disease In any case in which the disease appears to be one causing lesion only of the motor parts of the nervous system, if it should be found that the vibrating sensation is lost, this fact indicates that the disease is affecting also sensory structures, and thus it may be of diagnostic value In cases of paraplegia from spinal caries, and occasionally in spinal syphilis, the loss of the vibrating feeling may be the only objective symptom of affection or sensation, at an early stage of the disease In hemianesthesia, if the vibrating feeling is lost when the foot of the tuning fork is placed on the edge of the sternum on the side of the tactile anesthesia, but felt on the other side, the case is one of hysterical or functional hemianesthesia, or of malingering, while in hemianesthesia due to organic disease the vibrating sensation is felt when the foot of the vibrating tuning fork is placed on the edge of the sternum on the side of the tactile anesthesia

4 Rhythmical Exercises in Spasmodic Neuroses—Wilson endorses highly the value of rhythmical exercises in the treatment of spasmodic neuroses He says that each case must be treated individually, and exercises must be given which are best calculated to break up the morbid combinations, and to induce the habit of new associated movements It is important, he says, that day by day for days or weeks the muscular mechanism be kept so constantly tired by various rhythmical exercises that there is no energy left for the irregular spasmodic jerkings

5 The Cancer Question—Childe claims that there are abundant reasons now for an endeavor to bring the lay knowledge of cancer in the line with present surgical views, and to convince the public that a considerable share in the possibility of cure rests with them and that it varies impersonally with the delay in seeking advice

6 Possible Solution of Cancer Problem.—Mackay reports the case of a woman, who had a typical cirrhous cancer of the breast The tumor was removed, recurred and was then subjected to irradiation, from the Roentgen ray The patient's condition became very serious and a severe attack of pleurisy with effusion made matters worse Suddenly the patient began to feel much better, and the local conditions were entirely altered Even the recurrences of the tumor decreased in size and changed their appearance, and eventually disappeared almost entirely Mackay suggests that it was the serum that was responsible for this change, showing that a growing cancer produces in the serum a force which is antagonistic to the development of the cancer He thinks that his patient would certainly have died but for the pleural fluid, by which she was inoculated, and that the inoculation saved her life He asks whether that inoculation could not have been done artificially, and thinks it not too visionary to entertain the hope than a method founded on imitating what appears to have taken place in this case may eventually be possible

7 Changes in Spinal Root Ganglia in Cutaneous Cancer—Cheatle refers briefly to a belief expressed some time ago that the spread of cancer in the skin is associated with degenerative changes in the posterior spinal root ganglia, which supplies the area invaded He reports two cases, in which cancer had begun on the cutaneous distribution of one ganglion and spread into the cutaneous distribution of its neighbors, yet it was only in the ganglion on the distribution of which the cancer had begun that inflammatory changes could be seen The other ganglia into whose cutaneous distributions the cancer had spread, showed changes of degeneration

8 Streptococcic Conjunctivitis—Cunningham reports a case of this kind, which in its early appearances did not differ materially from the ordinary acute catarrhal conjunctivitis Examination of the discharge showed streptococci almost in pure culture The eye was lost, in spite of all efforts made to save it

The Lancet, London

July 20

13 General Surgical Anesthesia F W Hewitt
14 Plague W J R Simpson
15 Common Sporadic Seven day Fever of Indian Ports Simulating Dengue L. Rogers
16 *Experiments on Prolonged Protein Feeding D Forsyth
17 Male Triplets with Eclampsia in Patient Aged Sixteen R Ollerenshaw
18 *Effect of Tuberculin on General Tuberculo-opsonic Index in Tuberculous Patients H H Clarke and H G Sutherland
19 Multiple Hereditary Developmental Angiomata of the Skin and Mucous Membranes, Associated with Recurring Hemorrhages F P Weber
20 Case of Partial Perforation of Bowel, Simulating Appendicitis W P Blumer
21 Injury to Shoulder, Herpes Zoster, Influenza J Allan
22 Case of Supernumerary Digits W H W Attlee

16 Experiments of Protein Feeding—Forsyth summarizes the results of his experiments as follows 1 Fowls kept for long periods on protein diet but otherwise under healthy conditions show no hypertrophy or microscopic changes in the thyroid glands 2 Their bony tissues are not affected provided the deficiency of calcium and other bases in the meat diet is made up by a supply of lime 3 In none of the birds was any change indicative of gout observed 4 Each of the four fowls maintained under the above conditions showed an unusual amount of colloid in their pituitary glands 5 The thyroid glands of carniverous birds of prey are not obviously larger, proportionately, than those of other classes of birds, nor are there any peculiarities of microscopic structure in the glands of carnivorous and graminivorous birds referable to differences in their natural foods

18 Effect of Tuberculin on Opsonic Index—Clarke and Sutherland found that following the injection of tuberculin a rapid rise of the opsonic index occurred within two hours It rose to a maximum in four hours, fell to its original level in six hours and was succeeded by the usual negative and positive phases

Journal of Obstetrics and Gynecology of the British Empire, London

July

23 *Pelvic Inflammation in the Female T Wilson
24 *Epilepsy and Status Epilepticus in Connection with Pregnancy and Labor R Jardine
25 *Relation of Frequency of Fetal Heart Beat to Sex and Weight of Child J C H Leicester
26 Hysterectomy in Case of Fibroid Tumor of Uterus Firmly Bound Down by Adhesions J N Stark

27 Bilateral Primary Tuberculous Salpingitis with Secondary Infection of the Perivascular Lymphatics of the Uterine Wall. C Lockyer
28 Relation of Alterations in the Ammonia Coefficient to the Toxemia of Pregnancy C N Longridge

23 Pelvic Inflammation—Wilson discusses the clinical history of 1,092 cases of pelvic inflammation in the female

24 Epilepsy in Pregnancy—The first case reported by Jardine was one of epilepsy in which the attacks, which were very numerous and occurred at short intervals, began toward the end of the pregnancy There was no albumin in the urine, so that Jardine absolutely ruled out the possibility of the case being one of eclampsia The patient died, and the infant died on the third day The second patient had no attacks until she became pregnant The greatest number of fits occurred on the day after delivery In the third case the patient had convulsions when 12 years old, and then not again until she was in the sixth month of pregnancy They recurred during the second and third pregnancy The fourth patient began to have convulsions shortly after she was 10 months old. Since her marriage the attacks were not convulsive, but consisted of loss of consciousness During pregnancy the attacks increased in frequency, and more so during the period of lactation.

25 Frequency of Fetal Heart Beat—Leicester concludes his paper as follows 1, Sex has practically no effect on the frequency of the fetal heart beat, 2, it is impossible in any given case to form even a rough judgment as to sex from the rate of the fetal heart beats, 3, weight does seem to exercise, as a general rule, a distinct influence, since the slower the rhythm of the fetal heart the bigger the child is likely to be

Indian Medical Gazette, Calcutta

June

29 *Application of Vaccino-therapy to Dysentery W H C. Forster
30 Small Incinerators H A. Haines
31 Report of the Medical College Hospital Calcutta C. P Lukis
32 Rat poisoning and Its Effects in Azamgarh City J N Walker
33 Operation for Entropion R. Heard.
34 Melanotic Sarcoma and Sarcomatous Melanoma O St. J Moses
35 Two Surgical Cases M H. Thornely

29 Vaccino Therapy in Dysentery—Forster has given the subject of treating bacillary dysentery by vaccino therapy considerable attention and study He finds that a vaccine can be prepared from the Shiga bacillus, which in therapeutic dose gives rise to no greater discomfort than a little local tenderness. The vaccine he used consisted of an emulsion of the dead bacilli in normal salt solution, to which 0 5 per cent of carbolic acid had been added. The vaccine is injected subcutaneously in line with the outer border of the rectus muscle, half an inch above the umbilicus

Dublin Journal of Medical Science.

July

36 Why Are the Great Motor and Sensory Tracts of the Central Nervous System Crossed? A. F Dixon
37 Splenic Enlargement and Its Influence on the Blood. T L. De Courcy

Journal of Tropical Medicine and Hygiene, London.

July 1.

38 Plague W J Simpson.
39 Case of Mycetoma in Cyprus R A Cleveland.

Presse Médicale, Paris

40 (XV Nos 39-40 pp 313 328) The End of the Myogenic Theory of the Heart Action (Fin de la théorie myogène.) E de Cyon
41 Duration of Bed Rest after Physiologic Childbirth (Durée du sejour au lit.) L. Bouchacourt
42 Prophylactic Measures when Soldiers are Given Leave of Absence or Discharged for Pulmonary Affections. (Hygiène sociale) L. Landouzy
43 *Serious Anemia in the Course of Acute Infectious Diseases. (Anémies graves etc.) L. R. Dumas and Poisot.

43 Serious Anemia in the Course of Acute Infectious Diseases.—In the first of the three cases described a child of 11, with miliary tuberculosis, developed pernicious anemia of the plastic type In the second case a child of 20 months presented symptoms of a severe acute bronchopneumonia, but the *Staphylococcus aureus* was found in all its organs and there was proliferation of the bone marrow, of the myeloid type, with corresponding changes in the composition of the blood. The diagnosis had been acute bronchopneumonia at first, but was corrected to otitis with septicemia and pernicious anemia The child had been previously healthy, except for a transient diarrhea two months before the sudden onset of the fatal illness

Revue de Chirurgie, Paris

44 (XXVII, No 4, pp 520 712) *Congenital Angioma of the Face (Angiome caverneux de la face) D J Cranwell
45 *Spontaneous Hernias of the Semilunar Fold (Hernies du repli semi lunaire de Spiegel) L. Thévenot and Gabourd
46 *Luxation of Semilunar Fibrocartilages of Knee (Luxations des cart. semilun du genou) (Commenced in No 3) C Dambrin.

44 Angioma of the Face—In the case described by Cranwell the patient was a young man and the tumor in the left cheek had been noted since infancy and had gradually increased in size until it was as large as a child's head It had pushed inward the jaws and teeth and pushed up the bones of the cheek It was a comparatively solid growth, the skin above was normal, and the tumor was removed without much difficulty after ligation of a number of blood vessels Notwithstanding the adherence of the tumor and the almost inevitable hemorrhage, the final outcome of operative treatment has been excellent in all such cases If not removed, the progressive growth of the tumor dooms the patient. In the case described a number of angioliths the size of a pea could be palpated through the skin, and others were found in the tumor

45 Hernia of the Semilunar Fold—Thévenot and Gabourd report two cases of hernia in the space between the outer margin of the rectus and the insertion of the muscular fibers of the transversalis, near McBurney's point They review the similar cases in the literature and discuss the diagnosis and treatment The hernia occurs on a line joining the umbilicus and anterior superior iliac spine, after passing between the aponeuroses of the transversalis and internal oblique the hernia comes in contact with the aponeurosis of the external oblique, which may hold it back or be pushed out by it. When the hernia is small, the symptoms may be vague and be ascribed to dyspepsia, enterocolitis, etc If on the left side, sigmoiditis is surmised, if on the right, chronic appendicitis If a tumor is palpated it is differentiated as a hernia by the usual signs, but in case these are lacking the diagnosis may be difficult The prognosis is better in men than in women Obesity renders control of the hernia more difficult and inflammation may ensue Radical treatment is indicated for the young, and may be necessary for older and obese patients, but recurrence is liable, as with umbilical hernia In case of obesity and weak heart a truss is preferable to herniotomy

46 Recurring Dislocation of Semilunar Cartilage of Knee—Dambrin's article gives comparative summaries of eighty seven cases of luxation of the semilunar cartilage in which it was removed, and of thirty four others in which it was merely reduced and fastened in place His conclusions favor partial removal of the cartilage, as this is a simple, easy and effectual intervention The only conditions in which he would advocate meniscopexy are those arising when the cartilage is partially torn in front or at the side, or when its attachments are merely stretched without being actually torn In these circumstances, careful fixation will retain the meniscus in its normal position The literature cited shows the remarkable results obtained by appropriate arthrotomy in treatment of recurring luxation Research on the cadaver shows that a vertical incision, about 6 cm long, is preferable, exactly between the anterior and the lateral ligaments, carefully avoiding injury of the latter In seventy-four cases of partial extirpation of the dislocated semilunar fibrocartilage the results were perfect Lockwood's patient was able to dance and mount a horse within a few months, and Owen's patient won the championship at football a few months afterward. Recurrence was never observed, and ankylosis developed in only one case The minor points of the technic are reviewed in detail

Archiv f klinische Chirurgie, Berlin.

47 (LXXXII, No 3, pp 615-954) Detachment and Suture of Nerves (Nervennaht und -Losung) F v Auffenberg
48 Experimental Research on Steam Sterilization of Dressings. (Dampfdesinfection der Verbandsstoffe.) Gerdes
49 Two Thousand Operations for Appendicitis (Zur Appendicitis Frage.) A. V and E. Moschcowitz (New York)
50 Operations for Appendicitis at Marburg (Epityphlitis-Fälle, 1893-1906) R. Henking
51 Sacral Operations on Rectum and Uterus (Sacrale Op am Mastdarm und Uterus.) F Goldschwend

52 Clinical Manifestations with Gastrointestinal Pseudoleukemia (Gastroint. Pseudoleukämie) M Hoffmann
53 Retroperitoneal Tumors in Pelvis (Retroperit. Beckentumoren) Neupert.
54 Asepsis in Surgery of Ears and Nose. (Aseptik in der Ohren und Nasenchirurgie) G Heermann
55 N I. Pirogoff W I Rasumowsky
56 Experimental Study of Gastroenterostomy, Enteroanastomosis and Resection of Bowel (Gastroenterostomie, Darm resection, etc) Pochhammer
57 Teratoma of Upper Jaw (Teratoma des Oberkiefers) V v Bergmann
58 Double Empyema (Doppelseitige Empyem) D Hellin.
59 Bone Cysts and Fibrous Osteitis (Knochencysten und Ostitis fibrosa v Recklinghausen) H v Haberer
60 Fracture of the Center for the Epiphysis of the Calcaneum and Similar Injuries of the Bones in Youth (Fractur des Epiphysenkerns des Calcaneus) P Haglund
61 Idiopathic Retropharyngeal Abscess (Idiopath Retrophar-Abscess) F Kempf
62 Who First Recommended Burnt Sponge for Goiter? (Spongia usta gegen Kropf) P Richter
63 Technic of Amputation of Breast. (Amputatio mammæ) K. Vogel

Correspondenz-Blatt f Schweizer Aerzte, Basle

64 (XXXVI, Nos 1 5, pp 1-168) *Vertigo as a Symptom (Der Schwindel als Krankheitssymptom) Huguenin.
65 Epidemic of Cerebrospinal Meningitis in Switzerland in 1901 (Epidemie, etc. in Kanton Thurgau) Walder
66 Transient Stenosis of Superior Vena Cava with Tuberculous Affection of Right Lung (Temporäre Stenose der vena cava superior) W Spirig
67 Leukemia (Zur Kasuistik der Leukämie) A. Studer
68 Treatment of Appendicitis (Perityphlitis) E Hagenbach

64 Vertigo as a Symptom—Huguenin describes the mechanism of vertigo as it is observed in various affections and its differential value, especially in cases of paralysis of the ocular muscles It seems to be a prerogative of paralysis involving the oblique muscles Total unilateral oculomotor paralysis may be accompanied by vertigo so intense that the patient staggers as he walks, with a tendency to nausea and vomiting With horizontal vision there is little or no vertigo, as the objects are seen in normal position With upward vision one of the figures reflected on the retina slants, but it generally falls outside the field of vision With downward vision objects are reflected slanting, and the individual feels as if everything around him were falling to one side and the floor moving up or down Diagrams are given to illustrate the different mechanisms involved

Dermatologische Zeitschrift, Berlin.

Last indexed, XLVIII, page 180

69 (XIII, No 10, pp 688 748) Urticaria with Depressions (Urt. depressa.) H Vörner
70 *Roentgen Treatment of Leprosy at Memel Leprosorium (Behandlung Leprakranker mit R Strahlen) O Lassar and others.
71 (No 11 pp 749-826) Idiopathic Atrophy and Hardening of the Skin (Id Hautatrophie und Sklerodermie) P Rusch.
72 *Results of Treatment of Cutaneous Affections with Ultraviolet Rays (Uviollichtbehandlung bei Hautkrankheiten) A. Strauss
73 Lupus with Venous Congestion (Lupus pernio) R Polland
74 (No 12 pp 827 912) *Origin of Mercurial Colitis and Stomatitis (Pathogenese der merkur Col und Stomatitis.) J Almqvist.
75 (XIV, No 1, pp 1 66) *Present Status of Treatment of Lupus and its Indications (Lupus vulgaris) A Blaschke
76 *Prevention of Epididymitis in Treatment of Gonorrhea in Acute and Subacute Stages (Verhütung der Epid.) J Neuberger

70 Roentgen Treatment of Leprosy—Nine lepers were given systematic Roentgen treatment, but the results were not encouraging except in the early phases of the disease, when the lesions were few and isolated The benefit obtained in cases of this kind, it was stated, justifies continuance of the treatment Two or three exposures a week were made, each from 10 to 15 minutes in duration, and with the tube about 10 cm from the skin Inflammation and gangrene followed the exposures in some of the advanced cases The local reaction to the exposures was similar to that observed with chemical applications

72 Ultraviolet Rays in Treatment of Cutaneous Affections—Strauss has treated 350 patients with various skin affections by exposure to the ultraviolet rays He gives summaries of 42 of the cases, with a number of illustrations He found that preliminary application of a medicated salve enhanced the action of the rays—carbolic acid in alopecia; corrosive sublimate in lupus, solution of hydrogen dioxid in infected wounds The drugs seemed to be absorbed better under the influence of the hyperemia

74 Pathogenesis of Mercurial Colitis and Stomatitis—Almqvist relates extensive research which has demonstrated that three factors predominate in the causation of mercurial inflammation of the colon and mouth The action of the chemical, the action of hydrogen disulphid on a mucous membrane, and the injury of the membrane By combining these factors he was able to induce in animals lesions identical in every respect with those of mercurial colitis and stomatitis in men Putrefactive processes in the mouth and large intestine generate the hydrogen disulphid, which causes erosions or loosening of the mucosa The gas is absorbed through the erosions it causes, and, if the blood contains mercury, a deposit of mercurial sulphate occurs in the outer loops of the capillaries The endothelium of the vessels becomes coated with the mercury sulphate, and the physiologic functions are interfered with The nutrition of the part suffers, the vessels become partly paralyzed, and dilatation follows, with degenerative processes in consequence of the nutritional disturbance Experiments with other metals did not cause the precipitation of the sulphate from the absorbed hydrogen sulphid possibly because they are not dissolved by the blood in the same way as mercury In any event, they evidently do not combine in the same way with the sulphuretted hydrogen gas

75 Modern Treatment of Lupus—Blaschko summarizes his communication in the statement that lupus has lost its old reputation as a frightful affection It is not considered any worse now than many other skin diseases, and often proves easier to treat than certain obstinate forms of psoriasis and eczema He thinks that the greatest triumph of modern methods of treatment is that the affection now is arrested in its earlier phases Before many years, he adds, there will no longer be any cases that will require Finsen or hot air treatment Patients now apply to a physician early, and the affection is nipped in the bud, which is one of the greatest triumphs of modern dermatology

76 Prevention of Epididymitis—Neuberger states that epididymitis developed in only 6 out of 200 patients whom he treated for gonorrhea on the principle of injection of small amounts of a weak disinfectant, left in contact for only three or four minutes, repeating the injection three or four times a day He warns the patient that the fluid must be injected very gently, not forcing it into the posterior urethra, but injecting it very cautiously and slowly, as the patient stands with the penile portion of the urethra pendent, carefully refraining from distending the urethra If the gonorrhea runs a mild course, it heals in from two to four or six weeks under this gentle treatment with a weak disinfectant In case of much inflammation and edema, he applies antiphlogistic measures at first, and then injects only 3 c c of the disinfecting fluid After the acute and subacute stages are past, irrigation according to Janet will then quickly change the picture and complete cure soon follows, as a rule

Deutsche medizinische Wochenschrift, Berlin and Leipsic

77 (XXXIII, No 23, pp 913 952) *Pathogenesis and Specific Destruction of Cancers (Pathogenese und spez Abbau der Krebsgeschwülste) E v Leyden and P Bergell
78 Peculiar Double Granules in Trachoma Cells (Doppelkörnchen Parasiten ?—in Trachomzellen) R Greeff
79 The Antityphoid Protecting Substance Obtained by the Brieger Technic. (Nach der Briegerschen Schüttelmethode hergestellte Typhusschutzstoffe) R Bassenge
80 Proposal for Conventional Standard for Estimating Degree of Knee Jerk (Fixierung des Intensitätsgrade des Knie-Phänomens) A Pick
81 *Methods and Importance of Measurement of Pulse Pressure (Pulsdruckmessung) F Klemperer
82 Treatment of Descending Diphtheria uninfluenced by Antitoxin (Ueber heterochthone Serumunwirksamkeit und ihre postoperative Behandlung bei deszendierender Diphtherie) (Commenced in No 22) H Klose
83 Electrode for the Ear (Neue Ohrelektrode) K Herschel
84 Army Medical Corps in the Netherlands (Militärsanitätswesen) van de Moer

77 Specific Action of Liver Ferment on Cancer—In a previous communication, summarized in these columns, von Leyden called attention to the fact that every local injection or application to a cancer is followed by a reaction which takes the form of increased proliferation of the growth Injections of pancreatin and of radioactive substances are the only known exceptions to this rule, there is no increased growth after their application Experiments with other organ extracts since have demonstrated that liver extract, containing a fer ment which splits that part of the simplest peptone which pancreas extract does not affect, displays a similar lack of growth stimulating effect when injected into a cancer More than this, it has an actual destructive action, the cancer tissue breaking down under the influence of the enzyme contained in the liver extract, with necrosis and dissolving of the tissues This occurred strikingly, he asserts, in the case of a large sarcoma of the neck, in a recurrent mammary cancer and in an extensive uterine cancer originating in the vagina

The effect is so rapid and extensive and toxic substances are generated in such amounts that, for the present, the method can not be applied in therapeutics Cancer tissue in the test-tube is not destroyed and dissolved in the same way as in the living subject. In this point the liver extract differs from pancreas extract, but its action on the living cancer is incomparably more energetic and selective than that of pancreas extract on the living tumor The facts observed seem to indicate that the constant, unrestricted growth of the cancer—in which lies its special malignant feature—is due to the lack or inadequate supply of a probably specific, ferment hydrolytic force present in the normal organism The total or partial lack of this substance explains the unchecked growth of the cancer As the cancer grows, its avidity uses up this substance still more rapidly The liver extract used in the experiments was obtained fresh by pressure from the ground liver of animals

81 **Study of Blood Pressure.**—Klemperer expatiates on the importance of the study of the blood pressure and describes extensive experience with the various technics He has been especially pleased with von Recklinghausen's apparatus for determining the pulse amplitude, that is, the difference between the extremes of the diastolic and systolic pressures Five months of daily tests of the blood pressure in healthy persons and in patients have shown that the normal standard of amplitude is about 60 cm water The amplitude is exceptionally large in arteriosclerosis and small in heart disease, etc. It is not decisive in regard to the reciprocal relations between the heart energy and the peripheral resistance, but it affords better insight than mere determination of the blood pressure alone, and is particularly instructive when sphygmography and sphygmomanometry are combined.

Deutsche Zeitschrift f Chirurgie, Leipsic

85 (LXXXVI, Nos. 6-6 pp 391 586) *Experiences with Rectoscopy (Rektoskopie.) G Sultan
86 *Congenital (not operative) Gaps and Slits in the Mesentery and their Importance as Causes of Intestinal Occlusion. (Lücken und Spalten des Mesenterium.) W Prutz.
87 Clinical, Pathologic, Anatomic and Radiologic Study of 10 Cases of Multiple Cartilaginous Exostosis (Exostosis cart. mult.) F Pels-Leusden.
88 Thickening of Tubercle of Tibia in Adolescence. (Verdickung der Tub tibiæ.) H Jacobsthal.
89 Mechanical Ileus in Acute Inflammatory Abdominal Affections (Mech. Ileus.) M. Martens
90 Chronic Deforming Tendovaginitis and Luxation of Peroneus Tendon. (Tendovag chron def. und Luxation der Peroneal sehnen) O Hildebrand
91 New Formation of Lymph Glands with Carcinoma and Sarcoma. (Neubildung von Lymphdrüsen.) C. Ritter
92 *Curative Results of Fractures of Leg treated by Bardenheuer's Method of Extension (Unterschenkelbrüche und die Extensionsmethode.) Schrecker
93 Laceration of Renal Pelvis and Ureter with subsequent Paranephritic Cyst. Operation. Recovery (Nierenbecken und Ureterzerreissung) A. Hildebrandt.

85 **Rectoscopy**—Sultan describes a few cases to illustrate the importance of rectoscopy as a diagnostic measure in certain cases of lesions in the sigmoid flexure or upper rectum, or cases in which the intestinal lesion can be inspected through an artificial anus The rectoscope should always be used in the knee chest or knee shoulder position, as this favors introduction of air—this pneumatic principle being a great advantage for the inspection He warns, however, that the procedure is by no means free from danger when the walls of the intestine are inflamed or weak from any cause, and advises refraining from the use of the rectoscope in case of much debilitated, anemic patients with relaxed tissues In one case which he relates in detail the rectoscope was introduced readily for 20 cm., but insufflation of air ruptured the wall of the rectum or sigmoid flexure and the patient, a woman of 53, with chronic catarrh of the large intestine, succumbed seven weeks later Spastic contraction of the intestinal wall simulated a tumor, but the weakened wall was unable to resist the pressure of the insufflated air

86 **Gaps or Slits in Mesentery as Cause of Intestinal Occlusion.**—Prutz reviews the literature on this subject, giving summaries of 18 cases in which operative relief was attempted and 24 without, with 9 other cases of defects in the mesentery which had not caused any trouble He discusses the causes, symptoms and indications in the various conditions In some of the cases on record internal incarceration must have occurred previously and spontaneously subsided, as transient threatening attacks had been observed before the attack recorded

92 **Bardenheuer's Extension Treatment of Fractures of the Leg**—Schrecker produces convincing testimony as to the value of the Bardenheuer method of extension in treatment of fractures of the leg The broken bones were restored to normal structure and in nearly every case to normal function The technic is not so complicated and tedious as generally assumed, although it requires greater attention from the physician than a plaster cast The results, however, are incomparably better, as he shows by concrete examples and statistics from the Cologne clinic. Entire functional restoration, enabling the laboring man to resume his usual work, required on an average five and one half months Of 63 patients treated with extension 91 8 per cent regained complete functional use of the limb, including 40 who had both bones fractured Seven of the patients were more or less incapacitated for work, but resumed their occupations The mechanism of the extension is briefly described For certain fractures the tip of the foot is suspended from a cord over a pulley directly above, carrying a weight of 2.2 pounds Traction is also exerted from the side, above and below the fracture, with one weight of about 4.5 pounds on each side, while longitudinal extension is secured with a weight of 22 pounds The strips of adhesive plaster on each side of the foot are joined beneath, a little below the sole, where the cord is fastened, to insure more even traction on both sides of the foot and to promote absorption in the joints The technic may be modified to suspend the leg at two or more points The longitudinal extension draws the stumps of the bone out of their dislodgment in the muscles, and further reduction is seldom necessary It also reduces the pressure of the stumps on each other and on the periosteum, thus averting a tendency to excessive callus formation A plaster cast is unable to accomplish this The pressure of the cast is liable to induce atrophy of the points where it rests and, as they atrophy, the cast becomes loosened While the limb is being exercised the weights are removed Bardenheuer lays great stress on the patient's doing the exercising himself, after the first, as he instinctively stops short of the point where pain is induced.

Gazzetta degli Ospedali, Milan.

94 (XXVIII, Nos 30-36, pp 305 384) Diplococcus Aggressins. (Aggressina diplococcica) A. Barlocco
95 *Failure of Operative Treatment of Ascites in Cirrhosis of the Liver (Cirrosi epatica.) G Caponetto
96 *Sodium Citrate in Infantile Gastrointestinal Affections (Citrato di sodio) L. Miserocchi
97 *Diagnostic Importance of Auscultation of the Mouth in Pulmonary Tuberculosis (Rantolo orale.) S Vallivero
98 *Diagnostic Significance of Grocco's Triangle in Pleurisy with Effusion. (Triangolo di Grocco) G Padoa.
99 Differentiation of Typhoid Paratyphoid and Miliary Fever (Tifo paratifo e febbre sudorale) C S Materazzi.
100 General Anesthesia with Heroin and Chloroform (Eroinocloronarcosi) P Volta
101 *Physical Measures in Treatment of Emphysema of the Lungs (Enfisema pulmonare) E. De Renzi
102 Experimental Study of Pellagra (Pellagra.) G Tizzoni
103 *Favorable Results of Diphtheria Antitoxin in Treatment of Epidemic Cerebrospinal Meningitis (Meningite cer sp epidemica.) A Balduzzi.
104 Chemistry of Stomach and Intestines in Hysteria and Epilepsy (Chimismo gastrico ed intestinale nelle forme convulsive.) A Borri

95 **Failure of Operative Treatment of Ascites from Cirrhosis of Liver**—Caponetto reports extensive experimental research in this line, on dogs, with negative results All the dogs died after complete occlusion of the portal vein or ligature of the mesenteric alone, irrespective of whether omentopexy was done or not. His clinical experience, he declares, confirms his verdict that successful surgical treatment of the ascites in the cirrhosis of Laennec is an unattainable ideal

96 **Sodium Citrate in Infantile Gastrointestinal Affections**—Miserocchi reports favorable results from the use of sodium citrate in sixty seven cases of gastrointestinal disturbances in young infants The action of the drug was prompt and effectual, although less marked at first in acute gastroenteritis He thinks that it facilitates the digestion of various kinds of milk and theorizes to explain the mechanism He gave a tablespoonful of a mixture of 5 gm of sodium citrate in 300 gm of sweetened and sterilized water, after each feeding

97 **Oral Râles as Sign of Pulmonary Tuberculosis.**—Vallivero reports that he was able to detect Galvagni's "oral râles" in 60 cases of pulmonary tuberculosis while he never discovered them in a large number of cases of other pulmonary affections Applying the ear to the open mouth, a delicate râle is heard during inspiration or expiration, or both, not corresponding to the pulse nor the movements of swallowing Galvagni called attention to this sign of tuberculosis as early as 1875, but its importance is not generally recognized Vallivero affirms that its constant presence at all *stages of pulmonary tuberculosis* and its constant absence in other pulmonary affections have been abundantly established and certify to its pathognomonic character

98 **Grocco's Triangle in Pleurisy with Effusion**—This communication from Grocco's clinic at Florence reviews the various articles that have been published confirmatory of his assertions in regard to the diagnostic value of a triangular area of dulness in the region next to the spine on the side opposite to a pleuritic effusion This sign was recently discussed with favorable comment in an editorial in The Journal, Feb 2, 1907, page 423 Grocco ascribes the area of dulness mainly to the displacement of the organs pushed aside by the pleuritic effusion The displacement of the anterior portion of the mediastinum causes the "retrosternal sound" of Banti, but the displacement *of the posterior portion of the mediastinum causes* the triangle of paravertebral dulness described by Grocco He has found it unmistakable in every case of unilateral pleuritic effusion in his experience, with two exceptions These were elderly men who had had repeated attacks of pleurisy and pneumonia, and the pleura was probably fastened down by *adhesions The triangular* area of dulness was observed in several cases of pneumonia, but in each instance there was a coinciding pleuritic effusion The triangular area changes its location as the patient changes his position *In case of a* double effusion the triangular area is observed on the side opposite the largest effusion, and the area of the dulness decreases in size when the effusion is tapped.

101 **Physical Measures in Treatment of Emphysema of the Lungs**—De Renzi gives iodin and arsenic and has the patient *exercise in a Waldenburg apparatus, breathing in compressed* air In one of the cases described, the lungs have returned to normal size and the expiratory force has risen from forty to ninety five, while the patient has gained about twenty pounds in weight

103 **Diphtheria Antitoxin in Epidemic Cerebrospinal Meningitis**—Balduzzi reports favorable results from the use of diphtheria antitoxin in fifty nine cases of epidemic cerebrospinal meningitis It was used for its generic action in stimulating the defensive reactions This was marked in the cases in which the organism was capable of a response, but in the fulminating cases no benefit was apparent, as the organism did *not have time to feel the stimulating action* of the serum and produce the defensive substances The usual dose was 1,000 units Antistreptococcus serum was also used in a few cases

Nordiskt Medicinskt Arkiv, Stockholm.

105 (XXXIX, Surgery, Nos 2 3) *Influence of Professional Telephoning on the Organism, especially on the Ear (Einwirkung des berufsmäss Telephonierens) N R Blegvad.
106 *Treatment of Tuberculosis of the Hip in Children (Hüftgelenktub im Kindesalter) C M F Sinding Larsen.
107 *Chronic Inflammatory Tumors in Abdominal Cavity (Tumoren in der Bauchhöhle) H Waldenström
108 (No 4) Inflammation around the *Intramuscular Tendons* (Deltoid) (Peritenitis—Tenalgia—intra-deltoidea.) N V Akerblom
109 Direct Visual Inspection of Esophagus Trachea and Bronchi (Ueber Oesophago-, Tracheo-, und Bronchoskopie.) E Schmiegelow

105 **Influence of the Organism of Professional Telephoning**—Blegvad found retraction of the tympanic membrane in 26 4 per cent of 371 telephone girls examined at Copenhagen This anomaly was observed only in the ear used in telephoning He found no indications that the hearing was impaired by professional telephoning when *previously normal*, and neither did he find any evidence that the hearing was rendered more acute The ear seems to accommodate itself better and better to the work in time, but this, he thinks, is probably because the telephone girls learn to pay less attention to sounds in the environment There was no evidence to show that professional telephoning could produce an ear affection, but instances were encountered in which an electric shock or sudden noise over the wire aroused a slumbering ear process or induced one It is important, therefore, that persons with sound ears and normal hearing capacity should be engaged for this work Anemic, nervous and nervously disposed individuals should be excluded from the telephone service In a few cases, possibly only in the predisposed, he observed headache and subjective symptoms on the part of the ear, such as pain, pressure, humming in the ears and hyperesthesia He thinks that the long sitting still, the sudden loud noises coming over the wire and the fact that the operators are generally girls, explain these phenomena No serious injury has ever been observed at Copenhagen from an electric shock over the wire He considers the cap receiver worn by the young women as liable to induce acne on the outer ear and itching in the meatus which may lead to eczema, otitis of the outer ear, otomycosis and the like Its chief disadvantage, however, is that it can not be removed from the ear so quickly as the handreceiver in case of a sudden, unexpected electric shock The article fills more than 100 pages and concludes with a bibliography

106 **Treatment of Tuberculosis of Hip in Children**—Sinding Larsen is in charge of the seashore sanatorium at Fredriksvärn and in this monograph of 262 pages gives the full clinical histories and details of treatment of 56 boys and 44 girls Conservative treatment is the rule to the utmost possible extent, before operative measures are attempted, and the patients are kept a long time at the sanatorium, 1,453 days being mentioned in one case All but 12 of the boys and 6 of the girls were cured, while 5 others still have fistulas

107 **Chronic Inflammatory Tumors in Abdominal Cavity**—Waldenström reports three cases of chronic inflammatory tumors in the abdominal cavity Cocci alone were found in the pus Hofmeister and Borelius have published each two cases of the kind, but they ascribed theirs to actinomycosis Waldenström thinks that pyogenic cocci were responsible for the tumors, and that a diagnosis of actinomycosis should not be accepted without discovery of the ray fungus

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Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers

Manual of Diseases of the Eye For Students and General Practitioners By Charles H May, M D Chief of Clinic and Instructor in Ophthalmology College of Physicians and Surgeons, Medical Department, Columbia University, New York Fifth Edition, Revised Illustrated Cloth Pp 301 *Price, $2 00 net.* New York William Wood & Co, 1907

Memoria Anuario Correspondiente al Curso Academico de 1905 á 1906 Que se publica en cumplimiento de lo que dispone el articulo 26 del Reglamento Universitario Paper Pp 366 Havana Manuel Ruiz S en C Imprenta y Papeleria, 1907

Manual of Surgery For Students and Physicians By Francis T Stewart, M D Professor of Surgery, Philadelphia Polyclinic. *Illustrated* Flexible Leather Pp 778 Price, $3 50 net. Philadelphia P Blakiston s Son & Co, 1907

Elements of Human Physiology By Ernest H Starling M D Lond, etc Jodrell Professor of Physiology, University College London Eighth Edition Cloth Pp 716 Price, $3 75 net. Chicago W T Keener & Co, 1907

Thirty first Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains for the Year Ending Oct 31, 1906 Paper Pp 118 Trenton, N J John L Murphy Pub Co, 1907

Surgical Instruments in Greek and Roman Times By John Stewart Milne, M A M D, Aberd, Keith Gold Medallist in Clinical Surgery Illustrated Cloth Pp 187 Oxford The Clarendon Press 1907

Studies from the Rockefeller Institute for Medical Research Reprints Volume VI Paper Pp 407 Lancaster, Pa New Era Printing Co, 1907

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Original Articles

THE OPSONIC INDEX AND THE TUBERCULIN TEST

THEIR RELATIVE VALUE IN THE DIAGNOSIS AND TREATMENT OF EARLY TUBERCULOSIS IN CHILDREN *

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With the increasing interest and aroused public sentiment in the question of tuberculosis, the demand for means of making an early diagnosis in this disease grows more urgent. Not only will the physician demand more and more of the pathologist in connection with this subject, but the laymen will expect it from the general practitioner This will be found to be especially true in the case of children when the anxious mother has the child under close observation and each slight symptom invites attention.

The well-known truth that an early diagnosis in tuberculosis usually means cure is more evident to-day than it ever was The child, whose vitality is proportionately greater than that of the adult, frequently on receiving an infecting organism into its lungs speedily overcomes the infection, and the pathologic process may become quiescent. Years may intervene before any other symptoms arise, and perhaps not until, as a young adult, he may enter a factory, or sweat shop, or may be exposed to bad hygienic surroundings do we see develop in such an individual symptoms of marked tuberculosis following his debilitating surroundings and from the resistance of the body being brought below par

The number of children who will be found to show this sequence of early infection, temporary quiescence and later return with pronounced symptoms will not be appreciated until special work is carried out in this line of study

Among about 40 children recently examined by one of us, and living in families in which tuberculosis had occurred within the past eight years, 25 per cent were found who showed definite signs of consolidation at one apex All but one or two of these patients were free from any symptoms and appeared to be perfectly well If we can recognize in a child the tuberculous infection in the closed stage before tubercle bacilli are thrown out in the sputum, our endeavor to prevent the dissemination of the disease is greatly aided The adult can be taught to appreciate the importance of cleanliness, but who can control the small boy and prevent him from expectorating promiscuously wherever he goes, to the detriment not only of his own family, but of the whole community?

It is also important not to allow the stamp of tuberculosis to be put on a family when the disease does not exist, but is only simulated by some other disease, such as syphilis, influenza and chronic pneumococcus infection If a correct differential diagnosis be made in these cases, the hardship of tuberculosis treatment and the isolation of the child are done away with and the parents are relieved from a tremendous anxiety

The two means which are at present claiming the attention of the medical world for the early diagnosis of tubercular infection are the tuberculin test and the opsonic index Tuberculin is a powerful agent, and on account of its ability to do harm in inexperienced hands should only be used with the greatest care and by trained observers Koch's old tuberculin has been used extensively by us both at the infants' and at the children's hospitals Valuable information has been obtained and in our hands its proper use has proved to be without danger

The solution for using this test is prepared as follows One cubic centimeter of Koch's old tuberculin is added to 999 c c of boiled distilled water—one c c of this solution equals one milligram The dose of this solution for an infant or young child is from two to five milligrams, according to the age In using this test a record of the child's temperature must first be kept every two hours for twenty-four hours If it is then found that the temperature is irregular or high, the test is not of much value If, however, the temperature is regular and not over 37 7 C (100 F), the test can be used, and has been found in our experience to be of considerable value After the part of the skin to be injected has been thoroughly washed first with soap and water and then with alcohol and the hands of the operator and the syringe disinfected, the injection is made If the child is not tuberculous, no symptoms will be noticed, unless occasionally in certain cases of syphilis If it is tuberculous, the temperature will rise in from eight to twenty-four hours after the injection and will fall again within about twenty-four hours During the period of reaction there may be a certain amount of malaise but in our experience there is little or no danger of serious results A positive reaction will be obtained in about 95 per cent of cases of tuberculosis A negative reaction does not positively exclude tuberculosis, although it is very strong evidence against it

In giving tuberculin to children it is a question whether the best results can be obtained by beginning with a small dose and gradually leading up to the dose which will produce the reaction, or to give a reacting dose at once It has been held by some observers that the small primary dose produces a certain amount of immunity which interferes with the desired final and

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City June, 1907

marked reaction which proves that tuberculosis is present. On the other hand, it is now usually accepted that the small dose repeated with intervals of three days does not cause immunity and gives a less violent reaction. It is to be understood that too large a dose of tuberculin is as dangerous as too large a dose of any drug, notably opium, strychnin, or arsenic, which in proper doses are harmless, while in toxic doses they may be fatal. An instance of this truth is the following, and is noted simply that as in drugs so in the tuberculin test extreme caution should be taken before administration.

A boy 8 years old was seen by a physician, the history being that he had been having some slight lesions of the skin of the legs and arms, represented by small blisters, for three weeks. However, he looked fairly well. He complained of slight epigastric pain. Physical examination was negative, except that a number of small fluctuating and nodular swellings of the legs and arms and an occasional indurated area were detected. The white count was 17,800. Pulse was 120, respirations 30, temperature 100 F. The Roentgen ray showed no involvement of the bones. One of the lesions was incised and smears taken which showed a negative result. The urine was normal. Eleven days later, as he was not improving, 4 milligrams of Koch's solution (by mistake undiluted) were given for the diagnosis of a suspected tuberculosis. Two hours later the boy had a chill, headache and a temperature of 104.8 F. Later there was vomiting and high pulse, which continued during the night. Pulse was 150, respirations 50, temperature 106.5 F. He became cyanotic, collapsed and died the following day at 8:30 a. m. The autopsy showed acute general miliary tuberculosis and tuberculous ulceration of the cecum, but no lesions pointing toward the immediate cause of death.

As a corollary to confirm the tuberculous reaction in this case was the following history:

Another child, a girl about 6 years old, had been sick for some weeks. She had a slight cough, with loss of appetite and weight, and was pale. Physical examination was practically negative, except possibly lessened resonance of the front of the lungs. Temperature ranged from 100 to 101, pulse was 120, respirations 30. The Roentgen ray, however, showed small areas of slight consolidation in both lungs. She was gradually growing worse, and in order to obtain a definite diagnosis she was, at the same time and by the same physician, given the same dose (4 c.c.) of Koch's solution undiluted. In a few hours the temperature was found to be 106 F., the respirations were slightly increased, and the pulse was increased in rapidity, but except that she felt rather sick, she had no other symptoms, and by the next morning the temperature was the same as before the administration of the tuberculin. From this time all the symptoms improved; the signs in the lungs entirely disappeared, the *x* ray showed no definite signs of pulmonary disease, and in another month she seemed to be perfectly well. A question for future study to decide is whether or not the tuberculin in this latter case was curative.

If the temperature is under 100 F. 1/10 milligram is given as the initial dose. When no reaction is obtained the second dose of 1 milligram should be given three days after the first injection. A third injection after an interval of three days more has frequently been necessary and has been 3, 5 or even 10 milligrams, according to the age of the child.

If an undecisive reaction is obtained with the second injection, the third should be smaller in order not to get a violent result with the larger dose. Two other of our cases were of special interest. These children—respectively 10 and 13 years old—showed signs of consolidation of both apices, with loss of weight with cough and with expectoration. An examination of the sputa failed to show the tubercle bacillus, but numerous influenza bacilli were present. Three injections of tuberculin were given, the maximum dose being 10 milligrams without a reaction. These cases were undoubtedly cases of chronic influenza with consolidation, and the removal of the fear of tuberculosis was a great blessing to these families.

A positive reaction consists not only of a rise of one or more degrees of temperature above the previous level, but as much importance is to be placed on the constitutional symptoms and signs. When, following the injection of tuberculin, the patient complains in from 24 to 36 hours of headache, feverish sensations and nausea, and there are vomiting and diarrhea, with marked tenderness about the seat of the injection, and especially if there is an appearance of cogwheel or harsh breathing and râles over the suspected area, the result is positive even without a decided rise of temperature. Some cases will give almost all these symptoms and others very few, but the examination of the chest immediately following a reaction is of great importance.

The opsonic index may be a great aid in diagnosis when, on account of extreme prostration, or a high irregular temperature, tuberculin can not be given. If we follow the index in a case of pulmonary tuberculosis we find it runs in three different ways: low, high and fluctuating. They are important from a diagnostic point of view in the order given. Thus when we find a constant low index it may mean tuberculosis or only a lowered general resistance to the tubercle bacillus. When the index is constantly high we are generally justified in believing that the body is constantly taking up into itself small quantities of tubercular products, which from some focus stimulate it to increased resistance and, therefore, keep the index high. Tuberculosis is practically always present when this occurs.

The fluctuating index is of still greater value in that it indicates overdosage of the system with products from a tuberculous focus, and we, therefore, get a series of positive and negative phases. When the symptoms indicate tuberculosis and the physical signs correspond, we are generally safe in our diagnosis if the index is found to be a fluctuating one.

Of still more importance is the treated serum reaction. This test is made in the same way as the ordinary opsonic index, except that both the normal and pathologic sera are treated for 10 minutes at 60 F. in water before using. If the opsonins in the pathologic serum are concentrated, they are not affected by heating, whereas those in the normal serum are destroyed. Comparison of these will then show practically no phagocytosis in the test with normal serum, as its opsonins have been destroyed, whereas the opsonins in concentrated form in the pathologic serum are unaffected and phagocytosis occurs. This test is very reliable and will clinch a diagnosis when it occurs. Unfortunately, in the earliest cases it can not always be done, as the opsonic content of the serum may not be sufficiently concentrated. The index then may tell us a great deal as to the presence or absence of tuberculosis.

The effect of tuberculin on the index is a variable one, depending on the dosage and the time when it is given. If tuberculin is given in sufficient doses there first occurs a negative, followed by a positive phase of the index. If the dose is a very small one, the negative phase may be so temporary that it will be missed and only the positive appear. When the dose is sufficient to produce a reaction in the patient there is a marked negative phase and after a number of days the index returns to normal and gradually enters the positive phase to remain there several days The sense of well-being so often seen in patients for a number of days after they are well over the reaction from tuberculin occurs when their resistance is increased and the index above normal

The opsonic index may also give us some idea of how the patient will stand the increasing doses of tuberculin given for a tuberculin test If an examination of the index before inoculation proves it to be low, and the initial injection gives a marked negative phase, it is probable that further injections of increased strength will not only give a marked lowering of the index, but the constitutional symptoms of a reaction as well The general rule in giving vaccine, that when the index is very low the first injection should be small, applies to tuberculin as well as to the vaccine of staphylococcus, pneumococcus and other organisms

In the treatment, Trudeau believes that minute doses, steadily increasing and extending over several months, should be given, seeking, if possible, to avoid reaction. This will increase the patient's resistance, improve the general condition and aid in healing the process Wright believes that the dose of tuberculin should be controlled by the index, the object being to keep the index high with continuous small doses of tuberculin Whether or not this is sufficient in treating tuberculosis is undetermined, as there are many other factors in the production of immunity besides opsonins We certainly have not found it necessary to follow the opsonic index when we have used the tuberculin therapeutically

When we have used small increasing doses over a long period of time we have seen numerous cases in which the final results have certainly been favorable Reactions have been very few, and we are, therefore, encouraged to continue our studies in this direction

CONCLUSIONS

The early diagnosis of tuberculosis in children is more important to day than ever before on account of the increased facilities for a cure and the possibility in this stage of preventing the spread of the disease, and also because a quiescent process may be prevented from becoming an active one

Tuberculin is a valuable diagnostic agent in early tuberculosis, but when not used properly is dangerous, and in inexperienced hands may bring disaster

The opsonic index may be of great aid in the early recognition of tuberculosis, especially when tuberculin can not be given on account of temperature or prostration The use of the opsonic index may give some indication for the control of the dose of tuberculin used for diagnosis as well as for its therapeutic effects

DISCUSSION

Dr. Charles G Kerley, New York, said that Dr Koch's observations at the Babies' Hospital agree practically with Dr Rotch's statements, particularly that no harm is done by injection and that one injection usually suffices The usefulness of it has been demonstrated also in case of tuberculous peritonitis, in which diagnosis is often difficult, when there is no sputum to examine For some time this method has been of signal service to Dr Kerley, it strikes him as a useful measure in diagnosis

Dr F S Churchill, Chicago, said that the subject is too young for us to draw any general conclusions, not enough cases have been studied He mentioned a case in which tuberculin was given by Dr Hamilton—the dose being regulated by opsonic index—in his service at the Presbyterian Hospital The patient a boy 11 years of age, who was in the hospital for about six months with tuberculous peritonitis, eventually got well Of course patients with tuberculous peritonitis get well without tuberculin With regard to Dr Rotch's suggestion that vaccine be used for diagnosis, he is inclined to think fully as much value can be attached to the phenomenon of agglutination with these various organisms In many instances of meningococcus cerebrospinal meningitis on record the phenomenon of agglutination has been observed

Dr Isaac A Abt, Chicago, said that he wished to throw out a warning not to be too reckless He has had some sad experiences when repeated doses were given He mentioned a child of 7 or 8 who had obscure spinal trouble in which tuberculous spondylitis was suspected, and after the first dose of tuberculin no reaction occurred Repeated inoculations with tuberculin were made, never exceeding 2 mm In the course of two or three weeks the child developed tuberculous meningitis, and he thinks that every *one* felt some latent tuberculous focus had been started up

Dr. L C Ager, Brooklyn, said that in foreign literature more particularly the French, there seems to be wide divergence of opinion as to a safe dose Here in America we ought to determine how much we ought to use Dr Rotch speaks of using as much as 10 mm at a dose On the other hand, some French authorities only give doses of a fraction of a milligram, and say that anything more than 2 or 3 mm is unsafe for children All case reports ought to state definitely the dose and number of repetitions He asked if Dr Rotch had confined his experiments to the one preparation

Dr Louis Fischer, New York, said that he has not used tuberculin much in the last five years He would be afraid to use it until we have a little more positive knowledge of its real value. The value of the opsonic index, he thinks, is still one that has to be carefully studied The opsonic index can not be applied in private practice The men who have used it excessively speak against its use for general purposes Dr Fischer stated that he would hesitate to advise tuberculin for therapeutic purposes, and even in those obscure cases in which physical signs are absent, as in a central process of the lungs, he would rather go on record as being one who would wait than to run the risk that he saw one patient take within a few hours after administration of tuberculin The tuberculin test is like others except the specific antitoxin in diphtheria He does not think that we have reason to say that any serum is a specific in cerebrospinal meningitis or tuberculosis There are patients with tuberculosis who do not respond to tuberculin, and at the same time have tuberculosis Dr Fischer would rather use ordinary methods of physical examination for the present Even so small a dose as 1 of a mm he saw result fatally within a few hours

Dr. A. W Fairbanks, Boston, asserted that in his opinion one reason for the strong sentiment against tuberculin is due, especially as it emanates from Berlin, to Virchow and his pupils, and especially to Langerhans Dr Fairbanks said that he can remember Langerhans pointing out case after case that had come to autopsy with miliary tuberculosis, and telling the students that the disease had been disseminated by the tuberculin It is well known, he said, that Virchow and his pupils, and particularly Langerhans, were prejudiced, the reason for this undoubtedly lies in the fact that soon after the discovery of antitoxin, Langerhans' son was taken with diphtheria The antitoxin was injected—presumably late The child died Ever since then—or at least, Dr Fairbanks said, up to 1898—Langerhans has been bitterly opposed to the use of any serum His teaching, and that of some of Virchow's pupils, has been a factor in prejudicing medical men. It has taken Dr Fairbanks nearly nine years to overcome his reluctance to its use, and in a large clinic of tuberculous patients he has opposed its use until within the last year

Dr. S J Walker, Chicago, asked Dr Rotch whether, in his experience, the inoculation has been beneficial in the treatment of tuberculous adenitis Dr Walker has had experience with two cases of tuberculous adenitis, and so far as the diagnosis was concerned, the opsonic index gave no clue It was practically normal and did not vary above or below In one case the treatment was continued over a length of time without any benefit He has been unable to find anything in the literature regarding the therapeutic value of tuberculin in tuberculous adenitis

Dr R S Rowland, Detroit, Mich has been doing a limited amount of work with the Wright theory but it is too early, he said to draw any conclusions Several interesting facts were brought out by some of the other workers in Detroit One patient with tuberculous peritonitis, too bad for operation was given tuberculin as a last resort and improved rapidly The appetite improved first, then the general condition and the fluid disappeared from the abdomen The condition was so good that operation was delayed and now it is not thought necessary to operate Dr Rowland saw a postoperative case beginning to show improvement, but whether or not this was due to the opsonic treatment or to the time in the disease, he is unable to say However, the opsonic index has been higher than it was before this treatment, and the patient's condition is much better Two facts have been brought out by this treatment One that may be of value in the future, and which he thinks worthy of consideration is the fact that in tuberculous peritonitis if the index is low before treatment, it can be raised so as to have the patient in better condition for operation He thinks that operation is indicated as well as the opsonic treatment in most cases After operation the opsonic index goes down and remains low for a long time, and this shows possibly that operation may be simply an autogenous method of producing vaccine It may be that this is the reason why operation is of value Dr Rowland's observations lead him to believe in smaller doses of vaccine for therapeutic purposes than Dr Rotch has given, from 1/3 000 to 1/4,000 mg of tuberculin (T R) is a sufficient initial dose This is gradually worked up as the patient can stand it He also mentioned a case of meningitis —diplococcus meningitis He saw the case late and after securing the vaccine the child had improved to such an extent that he was not allowed by the parents to use it If he had given the vaccine he would probably have thought the improvement due to it

Dr T M Rotch, Boston, said that he has been using entirely Koch's original preparation So far as he knows there is no great difference in the efficacy of the two preparations, only care must be exercised if using a new preparation to give much smaller doses In these cases he investigated he gave the tuberculin without diluting Those two children had enough to kill cows As to the danger, he said that besides what has been done at the Children's and Infant's Hospital and at the Massachusetts General Hospital, a large number of children are being treated every day in this way It is routine treatment to discover early tuberculosis The work is done efficiently by Dr Floyd of Boston Dr Rotch said that if tuberculin is given properly, there is no more danger than in giving opium, strychnin or arsenic The dose for children is from 2 to 5 mm He has never given 10 mm That amount has been given at the Massachusetts General Hospital, but he thinks that from 2 to 5 mm is the best dose One milligram very seldom gives reaction If one wishes to get a slight reaction, the interrupted treatment, one can begin in that way, but if a reaction is desired in one dose more should be given Dr Rotch can see no reason for not using this measure in private practice It is taking a shorter time to determine the disease Ordinarily he has an exceedingly intelligent class of people to deal with, and they are glad to know, because if it is beginning tuberculosis there is opportunity for cure From 2 to 5 mm is given as a diagnostic dose For therapeutic measures he starts with small doses, going over a period of weeks and months In adenitis they have had favorable results at the Massachusetts General Hospital In the wards there were 25 cases of cerebrospinal meningitis in which he used antitoxin It looked as though it might cure these patients at first The final conclusions, however, were that it probably was not curative, but they have been using diphtheria antitoxin with the meningococcus vaccine, and this will carry up the opsonic index Then they stop the antitoxin and go on with the vaccine In the last ten or twelve years children that come into the Children's Hospital no matter what appears to be the trouble, are given diphtheria antitoxin This has given opportunity of comparison with other vaccines Dr Rotch has just reported a series of cases of cerebrospinal meningitis He thinks that it is doubtful indeed whether or not the vaccine treatment is going to be any more curative than antitoxin but it is worth trying A case which was brilliant but which he does not think proves anything, was that of a child 5 years old in private practice attacked within twenty four hours, there was high temperature and the child could not swallow Dr Rotch gave it a dose of 50 000 000 organism, the next day it recognized its mother, ate and swallowed and in two weeks it was sitting up, not cured but with subacute symptoms of contractures He said that he should not have stopped there, but should have known when to give another dose This physicians have yet to learn

THE DIAGNOSIS OF ANEMIA [*]

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We may be concerned either with the fact, or with the type Is anemia present? If so, what kind?

The question whether or not anemia is present can be decided only and sufficiently by testing the hemoglobin We should never assume that anemia is present either from the symptoms alone, or from the appearance of the patient, or from both taken together Mistakes from this cause are many On the other hand, there can be no mistake in supposing that the patient who has a low hemoglobin is anemic, and practically no mistake in supposing that the patient whose hemoglobin is normal, or nearly so, is not anemic

Diagnoses of anemia are very much more frequent than the facts justify Patients are frequently treated for anemia when nothing more than a pale skin substantiates the diagnosis The treatment does no harm except in so far as it may prevent us from taking measures more appropriate for whatever disease does genuinely exist On the other hand, the mistake of assuming that a patient is not anemic, because there is a good color in the face, may lead to more serious consequences

When the hemoglobin is normal, then, we need go no further in our blood examination, and may rest satisfied that anemia is not present If the hemoglobin is low, we must endeavor, both by a general physical examination and by a study of the blood, to determine what type of anemia is present

The important types of anemia may be classified as follows

1 Chlorosis
2 Pernicious anemia
3 Secondary anemia, including
    (a) Parasitic types
    (b) Other types

Rarer varieties are

4 Myelophthisic anemia.
5 Aplastic anemia

The first two types mentioned above are distinguished from the others by the fact that we have no idea of their cause In this sense they may be and have been called "primary" The other types of anemia are "secondary" in the sense that they would not exist but for the presence of other diseases of one or another organ

In the practical work of distinguishing these types of anemia the history of the case is of value to us chiefly when it points to some disease to which we can attribute the anemia as a result If there is a history of recent malaria, dysentery or hemorrhage, this is important, though not conclusive, evidence that the anemia belongs to the type called secondary If the history gives presumptive evidence of the presence of malignant disease of nephritis, or syphilis, it may afford us a useful hint regarding the type of anemia present But so far as the symptoms of anemia itself are concerned, they are quite indistinctive and almost useless to us in differential diagnosis, because they do not differ essentially from those which may be produced by cardiac disease (organic or functional), or by a variety of debilitated states The pallor and weakness, the dyspnea the stomach troubles, the slight edema of the ankles, the throbbing arteries and disturbed sleep are all non-characteristic of the anemia to which they are due because perfectly similar symptoms may be produced by other diseases

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[*] Read in the Section on Practice of Medicine of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City June, 1907

On the other hand, considerable aid is given us by taking account of the age and sex of the patient and by taking a good look at him Thus anemia existing in a girl between 17 and 25 is generally of the type known as chlorosis, while severe anemias in persons past 45, who do not complain of any special local symptoms but chiefly of general weakness, are very apt to turn out pernicious

It is therefore, on the physical examination of the body generally, and the blood in particular, that we must depend for definite diagnosis To this subject I now turn

The most important differential point in the physical examination of cases found to be anemic is the determination of the presence or absence of some organic disease known to be capable of producing anemia On the other hand, a negative physical examination, including a negative examination of the urine, is a most important piece of information Provided we know that anemia is present, a negative physical examination in a young girl points strongly to chlorosis, and in a person past 40 points strongly to pernicious anemia I do not think there is any type of anemia which can be positively determined by the blood examination alone Consequently, in the description of the different types to which I now turn, I shall group together all symptoms, physical signs and hematological data, which together determine diagnosis

I CHLOROSIS

There is no such thing as chlorosis in boys, and if it occurs in a woman past 30 it is almost invariably a relapse or recurrence of a chlorosis established earlier The typical age, as has already been stated is from 17 to 25 that is, during the years immediately succeeding those in which the function of menstruation is established Though the patients complain of weakness, dyspnea and the other symptoms common to all anemias, they are usually not emaciated, but rather plump Physical examination is negative or shows nothing more than systolic murmurs at all the valvular orifices of the heart, with perhaps slight edema of the ankles The menses are often suppressed, and dyspepsia in one or another type is almost always present. The blood shows a reduction of hemoglobin to a point which averages 40 per cent of the normal while the red cells are not far from the normal point averaging about 4 000 000 to the cubic millimeter This discrepancy between the reduction of red cells and the reduction in hemoglobin means that each cell contains only about half the amount of hemoglobin present in a normal red cell This fact is technically known as a "low-color index and is further revealed in the stained film by the striking pallor of the centers of the corpuscles and the general tendency to a diminution in the diameter of the cells There is nothing remarkable about the white cells The disease seems to be getting rare—rarer than pernicious anemia

II PERNICIOUS ANEMIA

The onset of this variety is strikingly insidious Patients can rarely tell within a year or two when it was they began to feel the general weakness and incapacity for the relief of which they seek advice There are usually no striking local symptoms and physical examination in the early stages of the disease may be absolutely negative It is only relatively late that we see the pale yellow tint of the skin, or find any changes in the function of the spinal cord Patients are usually well nourished, for their digestive functions are rarely disturbed except for relatively short periods of time The red cells are usually reduced to 2 000,000 or less at the time the patient first consults a physician This reduction is in striking contrast to the absence of severe pain or other local symptoms The hemoglobin is usually reduced relatively less than the number of corpuscles that is, with a count of 2 000 000 red cells we may have 50 per cent of hemoglobin The white cells are usually subnormal In the stained specimen we see that each cell contains as much hemoglobin as it ought There is no pallor of the centers and the cells are strikingly oversized This is the most important single point in the diagnosis of the disease Less important are the great deformities the changes in staining reaction, or the presence of nucleated red corpuscles

This blood picture is not absolutely characteristic of the disease, but, when taken in connection with the history and the physical examination as above outlined, it is almost pathognomonic

The diseases most likely to be confused with pernicious anemia are cancer of the stomach myxedema, nephritis, cardiac disease and one or another of the parasitic anemias Each of these will now be discussed, as types of secondary anemia

III SECONDARY ANEMIA.

1 *Malignant Disease and Pernicious Anemia*—In the vast majority of cases malignant disease produces no anemia that is at all likely to be mistaken for pernicious anemia, but now and then we see cases, especially of gastric cancer, in which the count of red corpuscles will not distinguish the two diseases Here the presence of marked and especially of continuous digestive troubles, together with a considerable degree of emaciation, a low-color index, and the presence of small-sized poorly-stained red cells with relatively few megaloblasts, or none at all, points to cancer of the stomach Of course where a tumor can be felt the difficulty of diagnosis is not likely to arise If, on the other hand the patient is relatively well nourished, has periods of weeks or months during which digestion is good and if the blood shows a high-color index and large-sized red cells—greatly deformed, abnormally stained and often nucleated—the disease is probably pernicious anemia

2 *Myxedema*—A clinical history and picture identical with that of pernicious anemia may be found in myxedema except as regards to the data afforded by blood examination The age of the patient the insidious onset the good nutrition, the general symptoms of anemia, the digestive disturbances (occasional, not continuous) may be the same in both diseases But here the blood examination sets us right, for the blood of myxedema is never strikingly similar to that of per-

nicious anemia, but presents the characteristics of other types of secondary anemia, as described in the last paragraph

3 *Nephritis* —Only the external aspect of the patient and the general complaints are confusing here The blood is quite unlike that of pernicious anemia, and the examination of the urine should help us to a speedy differentiation of the two diseases It should be remembered, however, that pernicious anemia can and often does coexist with a considerable degree of those senile changes in the kidney which receive the name of interstitial nephritis when they become extreme This coexistence of the two diseases should not be interpreted as anything more than coincidence The nephritis is in no sense the cause of the anemia, for in the vast majority of cases this type of nephritis runs its course without any anemia whatever

4 *Cardiac Disease* —This malady is similar to pernicious anemia only in the symptoms which it presents, and sometimes in the pallor which accompanies it—a pallor due presumably to the imperfect filling of the subcutaneous blood vessels The absence of any considerable anemia easily distinguishes the two diseases as soon as the hemoglobin test is made

5 *Myelitis*—Diffuse or patchy sclerosis of the spinal cord accompanies a large proportion of all cases of pernicious anemia In some of these cases the cord symptoms are so prominent and the symptoms of anemia so mild that the diagnosis of myelitis is made—the anemia being altogether overlooked The blood examination, however, is usually as characteristic as in the cases without cord symptoms, and if we do not forget altogether to examine the blood the diagnosis is easy The importance of differentiating simple myelitis from pernicious anemia with cord changes lies in the fact that the latter usually runs a much shorter course than the former

6 *Parasitic Anemias* —The fish tapeworm (*Dibothriocephalus latus*) is often carried by an individual without any anemia resulting In other cases the blood is more or less diseased, and in a considerable group the blood may be absolutely identical with that of pernicious anemia, as has been shown by the minute and careful studies of Schaumann among the Finnish fishermen

Hookworm disease, on the other hand, while often producing a very severe type of anemia, rarely produces a blood picture similar in all respects to that of pernicious anemia, for in hookworm disease, even when the red corpuscles are reduced to 1,000,000 or less, the color index usually remains low, the corpuscles small or of normal size, palely stained and less deformed than in pernicious anemia Abnormal staining reactions and the larger types of nucleated red cells are less frequent while the increase of white cells, and especially of eosinophiles, is usually distinctive

In both the parasitic anemias just described, however, an examination of the feces is the mainstay of diagnosis, for in cases severe enough to produce a profound anemia the eggs of the parasites responsible for the disease are sure to be easily found

IV MYELOPHTHISIC ANEMIA

As a result of a leukemic overgrowth of white cells in the bone marrow as in the latter stages of leukemia, the red-cell-forming tissue of the marrow is apt to become so much compressed that a pressure atrophy occurs As a natural result of this the supply of red corpuscles sent out into the blood stream becomes progressively diminished, and a grave anemia develops This happens in almost every case of leukemia, both of the so-called lymphatic and the so-called myelogenous type, provided the patient lives long enough for the development of the pressure atrophy above described In conditions other than leukemia, myelophthisis anemia is not often seen, but a few cases have been recorded resulting from malignant disease affecting the bone marrow

The diagnosis of this type of anemia must depend wholly on its cause, that is on the recognition of an overgrowth of cells of one or another variety, which drive the red-cell-forming tissue into a corner This means in most cases the recognition of the disease leukemia, one of the easiest of all diseases to recognize

In practical diagnosis, therefore, this type of anemia raises no considerable difficulty, it is here introduced merely because from the point of view of pathogenesis it deserves to be distinguished from the other varieties above described

V APLASTIC ANEMIA

Most of the recorded cases of this rare disease have occurred in young girls and have been accompanied by severe purpura The blood is like that of pernicious anemia, except that the erythrocytes are smaller and rarely contain nuclei, while all the granular varieties of leucocytes are greatly diminished Postmortem we find fatty marrow in the long bones, with no trace of regenerative effort

ELEMENTS OF DIAGNOSIS IN ANEMIA.

	Chlorosis	Pernicious Anemia	Secondary Anemia in General	Parasitic (Secondary) Anemia	
				Due to a Fish Tapeworm	Due to a Hookworm
Cause	0	0	+	+	+
History	Not helpful	Not helpful	Very helpful	Helpful	Helpful
General physical examination	Not helpful	Not helpful	Very helpful	Eggs in stools	Eggs in stools
Blood	Small cell type	Large cell type	Small cell type	Large cell type (sometimes)	Small cell type (usually)

SUMMARY AND CONCLUSIONS

1 In the diagnosis of anemia it is essential to take account of all the facts in the case The etiologic factors and the data of general physical diagnosis are as important as the hematologic findings Especially is this true in the types of anemia known as secondary

2 There are but two important types of anemia if we are to distinguish by blood examination alone To the first type (the small cell type) belongs the anemias secondary to hemorrhage, malaria, nephritis and other diseases which lead to increased destruction of red corpuscles So far as the blood picture is concerned, chlorosis is identical with the types just mentioned It is distinguished wholly by the absence of etiologic factors and by the age and sex of the patient

3 Pernicious anemia usually, but not invariably, can be recognized by the blood picture alone If the data of blood examination are combined with those obtained by a careful history and physical examination the diagnosis is one of the clearest and surest in medicine The most important single fact in the blood examination is the great reduction in red corpuscles, with a relative increase in the amount of hemoglobin per corpuscle (large cell type of anemia)

4. The parasitic anemias are not always to be recognized by blood examination, but present no difficulties of diagnosis if the eggs of the responsible parasites are sought Myelophthisic anemia is easily recognized by the evidences of its cause and offers no difficulties in diagnosis

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THE TREATMENT OF ANEMIA *

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NEW YORK.

I do not intend to read a paper on the details of the treatment of anemia All are familiar with the chief measures and remedies employed in this treatment Iron, arsenic, rest, nutrition, fresh air and other dietary and hygienic measures As to the particulars, any of the many good text-books will give the desired information But to do some justice to the task assigned to me, which at a weak moment I have thoughtlessly accepted, I shall discuss briefly some points in the treatment of anemia which, to my mind, mark a distinct progress I do this with special pleasure, since the underlying work of some of these points was done in this country by men to whom the medical profession of this country owes a debt of gratitude for their continued splendid activities in the fields of science and practice of medicine

The first point I wish to bring out refers to the progress made in the method of transfusion In secondary anemias, especially in those following acute or chronic hemorrhages, the best measure of treatment of the anemia would be to replace the lost blood But a century of attempts to carry out blood transfusion proved futile Alien blood, or defibrinate blood of the same species, is harmful to the recipient, and the method introduced by Von Ziemssen, namely, the rapid withdrawal of blood by a syringe from the vein of a spender and its immediate injection, without defibrination, into the vein of the receiver, had very little success in practice The method generally in vogue at present is, as you know, the venous infusion of one form or another of a so-called physiologic salt solution Obviously these solutions do not replace the essential element of the blood, the red cells

Within this year, however, the problem of transfusion has been brought nearer its solution by a bound, through the experimental and clinical efforts of George W Crile Using the improved technic of Carrel, he established an end to end union between a vein of a donor and an artery or a vein of a receiving animal, thus establishing a transfusion in which the blood of one animal is flowing directly into the vessels of another animal free from the dangers of intermediary manipulations In a long series of experiments, that surgeon-physiologist has studied the effect of such a direct transfusion on the receiving animal and obtained most gratifying results Even after complete exsanguination of an animal, with complete stoppage of respiration and with only a barely perceptible auricular heartbeat, a direct transfusion led invariably to a complete recovery of that animal Crile next tested that method in a desperate post hemorrhagic case of anemia in a human being, brothers lent themselves as spenders, and obtained the same blissful result In a recent communication before the Society for Experimental Biology and Medicine, Crile summarized his present clinical results by stating that the direct transfusion is a positive cure in all acute hemorrhagic anemias, and that in pathologic hemorrhages not only is the anemic condition invariably benefited but also the hemorrhages themselves are, in most instances, controlled without special treatment

Permit me to point out that the experiments which that admirable man of Cleveland has carried out on seventy dogs will, undoubtedly, save thousands of human lives, and I feel called on to add that the so-called humane societies which direct their agitation against animal experimentation and which just now, in their libelous circulars, are dragging the good name of Crile into mire, are engaged in a criminal activity which moral men, and especially physicians, should strongly resent

The second point I wish to bring out concerns a simple method of treatment of pernicious anemia based on an advance made in the understanding of its etiology The pathology of this disease, which is also designated as primary or idiopathic anemia, is admittedly obscure, but it was generally assumed that the cause is probably within the blood itself During the past few years several writers have advanced the view that the disease is caused by an infection or an intoxication from the gastro-intestinal canal These surmises had not much significance, since no facts were available showing a connection between the anemia and some definite form of infection or intoxication Recently, however, in a profound and extensive study of the chemistry of the feces and the urine and of the bacteriology of the feces of fifteen cases of pernicious anemia, Christian A Herter made a discovery that within the intestinal tract of such patients certain specific putrefactions are going on which are caused by the activity of anaerobic bacteria and that the *Bacillus capsulatus aerogenes*, discovered by Welch, is greatly in evidence in the feces of these patients With the recovery of the patients from their anemic condition the predominance of this anaerobic bacillus in the feces disappears Here we have a definite, well-established fact that at least in a certain number of cases of pernicious anemia, the anemic symptoms run parallel to the presence of well-defined anaerobic bacteria in the intestinal tract, and are probably caused by them Among other measures of treatment in these cases, Herter recommends frequent and thorough irrigation of the colon, since it is the chief thriving place of these bacteria Following this suggestion, Dittmar and Hollis were able to report a few months ago cures in two cases of pernicious anemia by irrigation of the colon which resisted all other methods of treatment. A few years ago Grawitz reported several cures of pernicious anemia treated by lavage, irrigation, restricted proteid diet of animal origin and other merely dietetic measures It may be that lavage, as well as the restriction of the proteid diet, are unessential to the success At any rate, the discovery that a good many cases of pernicious anemia are due to intestinal putrefaction, caused by anaerobic bacteria, and that some of these patients can be cured simply by efficient irrigation of the colon, present surely a valuable scientific and practical progress

The third point I wish to touch on very briefly relates to the rôle of iron in the animal organism and its use in the treatment of anemia

It is an old, well established clinical observation that inorganic iron is a most efficient remedy in chlorosis For the last two or three decades, however, its use was opposed to and ridiculed by able physiologic chemists and pharmacologists on the ground that inorganic iron can not be assimilated or even absorbed The history of the scientific struggle over this subject is very interesting and instructive, but I could not think of entering on it in the brief time allotted to me I shall only say that, as I believe, the struggle is now decided in favor of the clinical position and that recent pharmacologic writers, at least the majority of them fully admit that ingested inorganic iron is just as capable of being absorbed and assimilated as the organic iron compounds of the food

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* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City June 1907

In connection with the last-mentioned problem, I wish to state briefly my view of the relations of the ingested iron to the iron of the hemoglobin, a view which is based on well established clinical and experimental facts, as we know them at present

The normal animal body commands a large reserve fund of iron which is far in excess over its immediate requirement The liver, bone marrow, and especially the spleen, are the main depositories for the reserve iron, where it is preserved in the form of resistant organic compounds, like *ferratin*, for instance All ingested and absorbed iron, no matter of what character and origin, goes first to one of these depots where it becomes converted into the organic compounds, The first function of the absorbed iron is, therefore, to increase the iron reserve The iron requirements of the blood are supplied from the organic compounds of the iron reserve, which becomes then converted into hemoglobin, the ingested iron, no matter of what character, is never utilized directly for the construction of hemoglobin In normal conditions the iron requirement of the blood is small and presents a comparatively constant quantity, which varies but little with the size of the reserve fund of iron, provided the latter does not sink below a certain limit The quantity of the reserve iron, on the other hand, is apparently capable of greater variation, but also only within certain limits The greater ingestion of iron has therefore in the normal animal, no influence on the conditions of the hemoglobin in the blood, as at best it swells only the iron reserve

From the point of view presented here the metabolism of iron has certain features in common with the metabolism of carbohydrates No matter in what form the carbohydrates are ingested, they are always deposited in the liver in the form of glycogen, where it exists in excess over the immediate requirements of the body, and from where the blood is being continually provided, after the conversion of the glycogen into sugar, with an amount just sufficient to keep up a certain constant quantity Iron then, like the carbohydrates, is stored up in the body in the form of intermediary organic compounds into which all ingested materials are converted and all requirements of the body are drawn on

In conclusion, I may perhaps be permitted to point out that iron is an indispensable constituent of the animal body and, in conformity with the law governing all other bodily constituents, it is provided in considerable excess over the normal requirements of the organism, in other words, they are provided with factors of safety

DISCUSSION

ON PAPERS OF DRS BUNTING * ASHFORD AND KING,* CABOT AND MELTZER.

Dr Theodore Potter, Indianapolis, said that he has noted the frequency of pernicious anemia in the rural districts During the last year for instance, out of five successive patients with pernicious anemia seen in a period of nine weeks, four came from the country To be sure, the location may have something to do with it Indianapolis, with its population of nearly 200 000, surrounded by a thriving farming community, has brought to it a good deal of consultation practice from that part of the country Four out of these five patients came from the country, all men, between the ages of 47 and 55 all farmers While that proportion is not always the rule, Potter has, for some time been impressed with the rural prevalence of pernicious anemia In the medical society it is a common thing to hear reported cases of chlorosis, factory and shop girl's anemia leukemia, Hodgkin's disease and pernicious anemia but it is noted that many of the cases of pernicious anemia come from the rural districts

Dr. A D Atkinson, Baltimore, said that he had had a patient with uncinariasis who apparently recovered perfectly The patient died of pulmonary tuberculosis, four years after treatment for hook worm disease with thymol, and the autopsy showed no lesion in the intestinal tract

Dr Augustus A Eshner, Philadelphia, declared that the papers read on this subject have done much to sweep away the attempted differentiation between primary and secondary forms of anemia, especially Dr Cabot's classification Dr Cabot makes three tabulations of anemia, but he points out that the blood changes in chlorosis are practically the same as those in other forms of so called secondary anemias The distinction between so called primary and secondary forms of anemia must disappear with constantly increasing knowledge While some forms are due to obvious causes, others are of more obscure origin Thus we recognize parasitic and other forms of anemia, but the causes of chlorosis and of pernicious anemia are at present beyond our scrutiny As pointed out by Dr Bunting, however there is a reasonable probability, in a considerable group of cases at least, that the cause is a toxic one In view of that fact, and especially in view of the blood findings it seems that it would be wiser to make a classification based on the blood findings rather than on the etiology Dr Eshner proposed, accordingly, a division of anemias into qualitative and quantitative The designation qualitative may be applied to the type of pernicious anemia, in which there is a change in the relation between the number of blood cells and the percentage of hemolglobin, causing a low blood index, while the designation quantitative is applicable when there is a depreciation in both the hemoglobin percentage and the number of blood cells A given specimen of blood may, of course, exhibit both quantitative and qualitative changes

Dr Woods Hutchinson, New York City, said that the more time spent in the study of cases of chlorosis, and the more careful examinations made from every point of view, the fewer cases will be found He believes that we have been confusing other things with chlorosis, especially incipient tuberculosis The more the anemias are studied the more will it be found that toxins of some sort played a part in their causation The motto of a celebrated detective when assigned to a case was '*Cherchez la femme*" "Look for the woman" In the anemias our motto should be "Look for the toxin," whether of endogenous or exogenous origin We may have intoxications set up by bacteria kept as household pets in our own intestines, or we may have toxins which develop from the waste of our own tissues under certain conditions While the anemias are now divided into primary and secondary, he believes the time will come when primary forms will be abolished and all recognized as secondary Since Dr Herter's recent paper he believes that bacteriologists are now on the track of the particular organism causing pernicious anemia

In regard to the use of iron he believes that large doses in chlorosis often very considerably improve the condition of the blood but he deplores the indiscriminate use of iron It was thus reasoned out in the earlier days There is hemoglobin in the blood, hemoglobin contains iron, therefore, if the blood is low in color, give iron But the flaw here is, that although hemoglobin contains iron, it can be split into two moieties one containing all the pigment, the other none, and the latter contains all the iron Giving iron will not make pigment

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*The paper of Dr Bunting and that of Drs Ashford and King were published in The Journal August 10

Another point refers to the dose of iron and the way to give it. The total amount of iron in the body is about 45 grains and we frequently give 20 or 25 grains a day in Blaud's pill while the actual amount of iron that can be absorbed is only three quarters of a grain a day Moreover, more iron than the body actually needs for its maintenance is contained in the ordinary articles of diet unless these be unduly restricted The trouble lies in a faulty absorption of iron if anywhere Dr Hutchinson believes that if we would study our own cases from the point of the toxins and consider the iron administered as having an effect on intestinal sepsis and putrefaction we would get better results

Dr. James K. King, Watkins N Y said that in a few of his cases the blood pressure was very low in one case it was as low as 40 This was very unusual He recently saw a woman 52 years old, in whom had been made the diagnosis of pernicious anemia, according to the most exhaustive examinations The blood picture of pernicious anemia seemed positive Every therapeutic measure, including hydrotherapy vibration, massage electricity, the various forms of iron tonics, the red iodid of mercury internally and hypodermics of the salicylate of mercury had been tried without effect Colon irrigations were also used faithfully with Kemp's tube for cleansing the bowels relieving toxemia aiding in the absorption of food, and stimulating the circulation No improvement resulted from these various measures It seemed as though nothing more could be done for her relief A prominent physician was called from New York, who gave little hope of any improvement. The circulation was so bad and the heart action so weak that she suffered much from dyspnea At this time saline injections were given twice a day after a thorough irrigation beginning with eight ounces and working up to a pint twice a day This amount was allowed to remain after the irrigation These injections raised the blood pressure, as shown by the readings from the instruments, and also from the physical symptoms, such as pressure, headache, etc. It is now two months since the treatment was begun The blood pressure has risen from 40 to 80 mm mercury The blood count increased from erythrocytes, 1,040 000, leucocytes, 2,340 hemoglobin, 20 per cent , to erythrocytes, 2.381 000, leucocytes 3 800 hemoglobin, 43 per cent. She has improved very much in every way and goes about like other people After trial with all other things with absolutely no effect on the condition it was a great satisfaction to see these results from the saline injections The saline fluid should be retained so that it can be absorbed

Dr. Allen A Jones, Buffalo, said that in a series of 8 cases of pernicious anemia that came into his hands since Oct 1, 1906 in private and consultation practice, one patient was 70 years of age one 63, another 55, and the rest between 40 and 60 excepting two women whose ages were 33 and 20 respectively With regard to the blood picture in pernicious anemias there is the low red cell count, with a change in the color index and the large cell type Also it is not always easy to find the megaloblasts, he did not think we should rely on the presence of megaloblasts to come to a definite diagnosis of pernicious anemia if other things were present Before arriving at a positive diagnosis a study of the stomach should be made in the majority of these cases of pernicious anemia there is found a complete suspension of the secretory function of the stomach, an achylia gastrica This is so common that Dr Jones regards it as of considerable value. He spoke of cases of course in which he could exclude the secondary anemias. He depends in iron therapy on the use of the Blaud pill well prepared in preference to the proprietary preparations He feels that he loses valuable time if he places his patients for weeks or for months on the proprietary preparations of iron If one gets a good Blaud pill he will get decided and good results not only in cases of typical chlorosis which are rare but in many cases of secondary anemia With regard to the treatment of pernicious anemia occasionally it was his experience to find a patient improve so decidedly under treatment that he continues well for years Dr Jones has under observation a woman in Pennsylvania illustrating this point It is remarkable how she improved under the use of arsenic. Why, he does not know All physicians are familiar with the marked improvement that occurs in some cases under the use of arsenic

Dr Stanley P Black Los Angeles Cal discussing Dr Cabot's paper said he believes that Dr Cabot is not justified in separating Class 1 into two groups There is no question in Dr Black's mind but that all forms of anemia have a cause, and that there is no such thing as a primary anemia When called primary anemia it is because of our ignorance or inability to find the cause So *Bothriocephalus latus* anemia and other forms of anemia of toxic nature should be left in the same class they have the same blood picture He thought that ultimately the cause of all the anemias would be found With regard to the physical signs in chlorosis there is one sign that is frequently present in these cases a hypoplasia of the genitalia and cardiovascular system This is frequently found in chlorosis and is an important factor in the diagnosis There is another type of blood picture that Dr Cabot has not mentioned, practically a *preliminary* picture in secondary anemias the chlorotic type, in which the hemoglobin is reduced, but the red cells are not reduced to the same limit After severe hemorrhages there is an immediate reduction in the number of red cells, but the hemoglobin falls *pari passu* the color index being normal After a certain length of time the hemoglobin is diminished and we get the same blood picture as in chlorosis This type is found very often in secondary anemias before they reach the chlorotic stage

Dr Abraham J Hobson, Hampton Iowa said that as a practitioner in a country town of about 3 000 inhabitants he has been struck with the frequency of pernicious anemia there In his practice covering a period of twenty years he saw at least 20 cases, and in none of them was there any doubt as to the diagnosis A careful examination had been made and the diagnosis was based on the blood findings, some had been diagnosed by specialists in Chicago He has at present three cases in his own practice and two cases seen in consultation He asked "Is pernicious anemia more common in Iowa than it is elsewhere in this country ?" These five patients are all women, the youngest 35 the oldest 65 years old All are farmer's wives and well to do and therefore the anemia could not be the result of starvation

Dr. Frank Smithies, Ann Arbor, Mich said that whatever form of anemia presents itself, an exact diagnosis can only be obtained by study of the complete picture—the clinical manifestations as well as the findings from careful examinations of the blood With regard to the treatment he wished to lay special emphasis on rest, fresh air and proper diet By rest he meant absolute rest in bed, often for a long time. In particularly severe cases, ice bags over the precordia do much to control dilatation and slow the pulse By fresh air, he means outdoor air, the patients being in the sunshine eight or ten hours daily They should be carefully protected from the rays, to guard against sunburn With regard to diet he has seen many cases in which careful feeding—sometimes by the spoonful, at short intervals—had carried patients over blood crises, where all forms of medication had accomplished nothing In ordinary cases he has seen the best results come from a rich albuminous diet, with plenty of raw meat and egg He was glad to note that a previous speaker had mentioned the importance of stomach analyses in anemias In pernicious anemia especially, he had found achylia common In these patients hydrochloric or tartaric acid should be supplied, and in the cases of low motility lavage should be given In reference to the finding of low blood pressure which one of the speakers had mentioned, this is so commonly found in diseases not due to anemia that he did not consider it of diagnostic value He had used the Erlanger apparatus and found that low systolic and diastolic pressures are the rule but the findings have but rarely been of great value in directing therapy He too had noted the large number of cases which came to Dr Dock's clinic from the country side. He had however always considered that this was because of the geographic situation of Ann Arbor rather than that the disease was especially peculiar to farmers The disease is rarely recognized in the villages and small towns and consequently the cases drift into institutions or larger cities. He thought, however, that this point might be worth investigating Perhaps, then, some definite regions of origin might be discovered

Dr **Norman Bridge**, Los Angeles, Cal, said that he failed to hear mentioned the one medicament of great value in chlorosis This drug is pre eminently valuable in chlorosis as a therapeutic measure capable of increasing the hemoglobin of the blood It has been shown, and clearly enough, he believes, that iron in many of these cases is of little value The one drug he had in mind was calomel in tonic doses—not cathartic doses—that is, from 1/50 to 1/30 of a grain, given three times a day but not oftener How it works or operates he does not know or pretend to know But that it has a power vastly greater than the iron preparations in securing good blood and increasing the iron in the blood, there was no question in his mind *It should be given at least a month continuously*, and there is, of course, no objection to giving at the same time iron or any better tonic—or all together

Dr **C H Bunting**, Charlottesville, Va, referred to the multiplicity of the causes of pernicious anemia Dr Cabot has divided this type into pernicious anemia and the anemia due to parasites Experimental work has shown that one may expect to find a multiplicity of causes, because various toxins can be used to produce the same picture in animals In human pathology, then, one may have a variety of causes producing the condition in the blood which is described as the picture of pernicious anemia He believes that the great majority of the cases, however, which are recognized as cases of pernicious anemia are due to practically the same cause, this is true, although clinically and pathologically one can not separate the cases which are due to a parasite from those which are due to unknown causes As to the treatment, there is one suggestion to be made from the pathologic side Rest, fresh air and diet are very important in enabling the bone marrow to produce and reproduce new red cells But the essential thing must be the removal of the cause In the *Bothriocephalus latus* anemias we have a good example of what results when the cause is removed, recovery Consequently, he believes that we have one certain indication in every case of pernicious anemia, and that is the careful treatment of the gastrointestinal tract

Dr **Bailey K. Ashford**, Washington, D C, said that he approved of Dr Hutchinson's remarks regarding the influence of iron Iron is of value in certain cases of uncinariasis in which the recovery is slow, in such cases iron does well But ordinarily iron is not necessary As to the possibility of uncinarial anemia being produced by a toxin, we have not yet been able to demonstrate any such toxins but there are certain facts which might make this probable in uncinariasis He wished to call attention in this connection to the hyaline degeneration of the arteries of the Malpighian corpuscles of the spleen

Dr **Richard C Cabot**, Boston, said that Dr Bunting's classification of anemias into primary and secondary is simply a question of convenience, there is the same clinical picture and pathologic anatomy in the anemia from *Bothriocephalus latus* as in pernicious anemia It is merely convenience that makes us call one primary and the other secondary Dr Cabot said that Dr Ashford's work in Porto Rico is really a campaign against a disease of the whole people, for a considerable majority of the population of Porto Rico have uncinariasis Now through the energy and honest effort of Dr Ashford the island is likely to be freed of the disease Dr Cabot said that he never hears or speaks of this disease but that he feels the greatest debt of gratitude to Dr Ashford for what he has done toward saving the population of this island from inefficiency and from disease In regard to the existence of pernicious anemia in the rural districts Dr Cabot said that out of 337 cases he has seen, more than two thirds come from the rural districts, whether a coincidence or not, this certainly is a striking fact Pernicious anemia will be found to be a common disease in every part of the country if it is looked for Pernicious anemia is ten times more common than myxedema and five times more common than leukemia Dr Cabot has tried saline injections as he has tried many other treatments for pernicious anemia Out of the 337 patients with pernicious anemia three are alive, and he does not believe they got well by reason of what he did for them This fact made him rather slow in accepting anything in the way of therapeutic measures, whether intestinal flushings or arsenic, or rest, fresh air, which he always gives, or anything else He has never been able to make up his mind that arsenic *does any good*

Dr. **S J Meltzer**, New York, said that it is not fair to bring up here the fatal case in Philadelphia as an argument against the value of direct transfusion as a method The case may prove, if it proves anything, that in *certain pathologic* states transfusion is inadvisable Crile, however, introduced the method of direct transfusion primarily for anemias caused by hemorrhages of traumatic origin In these cases the direct transfusion apparently renders excellent service The method, therefore, marks a distinct progress in the treatment of anemia, and that is all Dr Meltzer claimed for it The celebrated clinician, Niemeyer, is quoted as saying that his success was due to the use of iron in chlorosis He gave Blaud's *pills in large quantities* Dr Meltzer would advise other physicians to do the same, the opinion of some physiologic chemists and hematologists notwithstanding The history of the pharmacology of iron for the last twenty five years teaches that, in the practice of medicine, the clear sighted clinician is very frequently a safer guide for the practitioner than physiologic chemists, some of whom venture to offer positive opinions in fields in which they possess neither theoretical nor practical personal experience

AN INVESTIGATION OF THE NATURE OF PROTEID-SOAP COMPOUNDS AND OF THE STAINING OF PURE FATS AND LIPOIDS BY SCHARLACH R AND SUDAN III *

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These studies were undertaken for the purpose of further investigating certain reactions on which Klotz[1] bases in large part his interpretation of pathologic calcification and which, as his interpretation is not in accord with that reached by Wells[2] and independently by me,[3] are matters of considerable importance in the elucidation of this interesting problem

The observations in question are those concerning the value of the so-called proteid-soap compounds and of the staining of fats and lipoids by Sudan III and Scharlach R

PROTEID-SOAP COMPOUNDS

Klotz, as the result of a series of microchemical examinations of various kinds of calcified tissues, concluded that the deposition of lime in tissues undergoing calcareous degeneration is dependent on the formation of calcium soaps as an intermediate step He further states that an essential factor in the production of these soaps is the initial combination of a soluble soap and an albuminous substance He does not assume, however, that this is the essential process in all varieties of pathologic calcification but states that in exceptional cases there may be two other possibilities First, 'that under certain conditions the calcium salts act directly on the neutral fats present in the degenerating cells" or, second, "that the neutral fats are first broken down into fatty acids and that these react with the calcium salts to form the soaps"

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* From the Department of Physiological Chemistry, Bender Laboratory Albany N Y This investigation was pursued under a grant made by the Committee on Scientific Research of the American Medical Association

[1] *Studies on Calcareous Degeneration* I The Process of Pathological Calcification Jour Exp Med 1905 vii 633

[2] Pathologic Calcification Jour Med Research 1906 xiv 491

[3] Chemistry of Atheroma and Calcification (Aorta) Jour Med Research 1906, xv, 355

As he was convinced that the combination of soaps with proteid is a necessary intermediate product in certain forms of calcareous degeneration, he attempted to reproduce the reaction in the test tube To a weak solution of a soap (sodium stearate, oleate or palmitate), a dilute solution of egg albumen was added In a half hour or longer, at room temperature, a white flocculent precipitate appeared This he considered to be a combination of the soap and the egg albumen When this product was treated with Sudan III the same pinkish color, visible in the "soap" granules in tissues undergoing calcification, was seen to be present The amount of precipitate, he states, is further increased by the passage of carbon dioxid (CO_2) through the solution Acid calcium phosphate, which does not affect simple solutions of egg albumen, when added to a mixture of egg albumen and soap causes a rapid and dense precipitation

As microchemical reactions in tissues are notoriously unreliable and controlled only with great difficulty these reactions in the test tube necessarily formed the basis of Klotz's theory and their explanation is, therefore, of the greatest importance

The first step in the present investigation was to determine the nature of this precipitate, that is, whether a real combination of proteid and soap does occur, and if not, to ascertain the actual composition of the precipitate These experiments were carried out with egg albumen and the blood serum of horses The soluble soaps used were sodium stearate and sodium oleate In repeating the experiments of Klotz an identical reaction was obtained, that is, on the addition of the soap solutions to the egg albumen or horse serum a flocculent precipitate appeared which gradually increased in amount and reached its maximum at the end of twenty-four hours In order to determine whether or not this was the result of a true combination of proteid and soap or merely a precipitation of some substance in the mixture, the following experiment was performed Two lots of 100 c c each of horse serum were taken, to one 100 c c of distilled water were added, and to the other 100 c c of freshly-prepared 5 per cent sodium oleate solution At the end of twenty-four hours a finely granular precipitate was visible in the serum-water mixture, while in the serum-soap solution a copious flocculent precipitate appeared These were filtered and yielded clear straw-colored filtrates In order to determine whether or not any combination of proteid had taken place in the soap-proteid mixture, duplicate total nitrogen determinations were made, by the Kjeldahl method, on aliquot parts (5 c c) of each of the filtrates The results were as follows

Total Nitrogen

Serum and water mixture	Serum and soap mixture
20 15 c.c. of $\frac{N}{10}$ acid.	20 15 c.c of $\frac{N}{10}$ acid

From these figures it is easily seen that the nitrogen (proteid) contents of both filtrates was the same and that no more nitrogen was thrown out of solution by the soap than by the water alone This finding is of considerable importance, for if a true combination of proteid and soap had taken place the filtrate obtained after the removal of the precipitate would have contained less nitrogen (an indication of soluble proteid) than the filtrate from the serum-water mixture, where no combination was suspected As this did not occur, the conclusion is inevitable that the precipitate is not a proteid-soap compound, but must consist of a mixture of other substances thrown out of solution

In order to throw more light on this reaction, experiments were made to determine the influence of the colloids (globulins, albumins) and salts of the serum and egg albumen in the precipitation of the soaps

GLOBULINS

The fact that Klotz emphasized the increased precipitation after the passing of carbon dioxid through the fluid suggested the possibility of the globulins of the serum being the main constituent of this precipitated material It is a well-known fact that globulins are precipitable from neutral solution on addition of carbon dioxid gas Globulins, therefore, were prepared from normal horse serum in the usual way (ammonium sulphate method with dialysis) The globulin thus obtained was dissolved in a 10 per cent. solution of sodium chlorid and a small quantity of it added to a weak solution of sodium stearate Immediately a heavy flocculent precipitate appeared As a control, however, a 10 per cent. solution of sodium chlorid was added to a solution of the soap, and an apparently identical precipitation occurred

It was evident, therefore, that the material precipitated in the first instance was not the globulin but the soap This reaction is analogous to the salting out of soaps in their commercial manufacture In an attempt to exclude this factor the globulin was put in solution with the smallest possible quantity of salt, but in every case control experiments using solutions of the same strength of sodium chlorid showed an equal and similar precipitation The only part then which the globulin can play in this precipitation lies in the reaction noted above in which the globulin of the serum or of the egg albumen can be precipitated by the addition of water alone

INORGANIC SALTS OF THE BLOOD SERUM AND EGG ALBUMEN

To a weak solution of sodium stearate, an equal quantity of physiologic sodium chlorid solution was added As control, an equal quantity of distilled water was added to another portion of the sodium stearate solution At the end of twenty-four hours a precipitate was visible in both tubes, but was more marked, however, in the sodium chlorid solution In the sodium stearate and water mixture the precipitate was finely granular and, to a certain extent, diffuse, while in the soap-sodium chlorid mixture it was more flocculent and the supernatant fluid slightly translucent

As a further control a solution of the normal salts of the serum were obtained as follows One hundred c c of horse serum were added to 400 c c of distilled water The mixture was then boiled and the proteid coagulated by the careful addition of acetic acid The filtrate, clear and colorless, was then evaporated to dryness to remove the excess of acetic acid and by the addition of distilled water was brought up to the original volume of the serum A similar solution of salts of egg albumen was obtained after removal of the coagulable proteids To 10 c c of each of the proteid-free solutions 10 c c of sodium stearate solution were added At the end of twenty-four hours a precipitate was visible which, although much finer in appearance, approximately corresponded to the precipitate formed by the addition of the physiologic sodium chlorid solution to the sodium stearate. As the result of these tests it may be stated that while the inorganic salt content of egg albumen or of serum does not probably cause the whole of the voluminous precipitate obtained on addition of soap to the proteid, it is a factor in the production of a small amount of it.

In this connection attention must be called to the calcium content of the egg albumen (1.7 to 2.9 per cent. of the ash) and blood serum (.015 per cent. of the serum). In both of the reactions with these fluids and the soaps this calcium is undoubtedly a factor in precipitating this latter as calcium compounds.

ALBUMINS

The effect of salt-free albumins was then investigated. These were prepared by dialyzing egg albumen and horse serum for about ten days or until tests for chlorids were negative. In each instance the precipitated globulins were filtered off, in the case of the serum a small amount of water soluble globulin probably still remained in solution. Comparing solutions of albumins so prepared plus stearate soaps with the control solutions of egg albumin and serum albumin respectively in water, at the end of twenty-four hours no difference was visible. In all the tubes a very small amount of a very finely granular precipitate occurred.

These reactions render it probable that the albumins do not enter into the composition of the precipitate which is formed when the soaps react with the egg albumen. In order, however, to exclude the possible factor of the albumin inducing a "colloidal precipitation" experiments were performed with other colloid substances, for instance, gelatin and starch. With gelatin a marked precipitation was apparent with the soaps, but as the admixture of calcium salts with this substance could not be eliminated, solutions of other colloids like starch were tried.

A rather fluid starch paste was prepared. Some of this was added to equal amounts of egg albumen and blood serum. In both cases a somewhat gelatinous precipitate occurred which was shown to consist of starch. Solutions of starch added to the soap solutions caused a precipitate which was analogous to that produced by water alone. Apparently, therefore, colloids may precipitate starch from solutions as well as soaps, but the reverse does not occur.

Thus far only a small amount of the precipitate has been accounted for. We have shown that the inorganic salts of the serum are responsible to a slight extent in the precipitation of the soaps, the albumins on account of their colloidal nature possibly also in the same degree, while the globulins enter only slightly into the composition of the précipitate as a result of the dilution of the mixture by the solutions added.

FATTY ACIDS

The changes occurring in soap solutions suggested the possibility of fatty acids playing a part in the precipitate. For example, a weak solution of sodium stearate or oleate freshly prepared and filtered is translucent and free from any precipitate. When tested with litmus it is alkaline in reaction. If it is allowed to stand for twenty-four hours a granular precipitate in the case of the stearate, gelatinous in the case of oleate, gradually appears.

If the precipitates are filtered off and the filtrates allowed to stand for twenty-four hours a similar precipitate reappears. This precipitate is insoluble in water, but dissolves readily in ether and chloroform. Such a chloroform solution reacts acid to litmus and contains fatty acid. These facts just outlined can be easily explained. Part of the soap on passing into solution undergoes dissociation and hydrolysis with the production of sodium hydroxid (NaOH) and free fatty acid. The mixture, therefore, becomes alkaline and the fatty acid gradually precipitates. This passes into solution in the chloroform.

With these changes in mind, the proteid-soap compounds were examined as follows: A quantity of the precipitate obtained on the addition of a sodium oleate solution to egg albumen in suspension was now shaken up with the neutral chloroform and found to a great extent to be soluble. Tested with litmus, the chloroform reacted acid to litmus and the neutral point was only reached after the addition of a definite amount of a decinormal solution of sodium hydroxid. This observation, therefore, demonstrates conclusively that the major portion of the precipitate which Klotz considers to be a proteid-soap compound is composed of fatty acids.

Fatty acids may also be thrown out of solution on the addition of weak acids. If carbon dioxid (CO_2) which in aqueous solutions is a weak acid be passed through a solution of soap, a flocculent precipitate gradually separates out, which when taken up in chloroform and tested reacts acid to litmus. In the formation of the hypothetical proteid-soap compound Klotz emphasized this increased precipitation on the addition of carbon dioxid. He further states that the precipitation is increased by the addition of a solution of acid calcium phosphate. This reaction is of course due in part to the precipitation of the fatty acids by the acid solution and also to the formation of insoluble calcium soaps by the addition of a soluble calcium salt.

To summarize briefly: The so-called proteid-soap compound does not exist. The material may be due in small part to a precipitation of the soaps by the inorganic salts of the serum or egg albumen and in small part to globulins thrown out of solution. An equally small part is caused by a precipitation of the soaps or fatty acids by the colloid substances in the serum and egg albumen. The main portion of the precipitate, however, consists of fatty acids obtained from a hydrolysis taking place in the soap solutions.

THE STAINING OF FATTY COMPOUNDS WITH SUDAN III AND SCHARLACH R.

Klotz states that the soaps are ready solvents for Sudan III. He attempts to demonstrate this by making a concentrated aqueous solution of the soap and adding powdered Sudan III. He states that the clear deep red solution which results can be filtered, diluted and, when evaporated to dryness, yields pinkish yellow areas which are distinguishable from the golden-red staining fat. He cites the statement of Fischler, who asserts that Sudan III is soluble in soap solutions, but who further states, however, that the soap when stained with Sudan III rapidly loses its color when treated with 70 per cent. alcohol, the color being transferred to the alcohol. With this latter statement Klotz fails to concur wholly. He admits that this is true in regard to soap solutions in the test tubes, but states that soaps in the tissue are less soluble in weak alcohols. The retention of the stain there, he thinks, is due to the combination of the soaps and proteids already discussed. These observations, in view of our experience with the proteid soap compounds demand re-investigation

Scharlach R and Sudan III are soluble in alcohol, chloroform ether toluol, acetone, etc, and in certain fats and lipoids When added to water no color is imparted to the fluid even at the end of several days It is generally accepted that the stains are insoluble in water

SOLUBLE SOAPS

If to a fairly concentrated solution of sodium oleate which has been freshly made and filtered a small quantity of Sudan III is added, after "thorough mixing," no color is immediately imparted to the fluid Gradually, however, the solution assumes a pinkish color which after standing for a while, becomes much deeper At the end of twenty-four hours the solution is colored a deep red If some of this solution is shaken with ether or chloroform the color immediately leaves the aqueous solution and is transferred to the chloroform and ether When tested with litmus the solution reacts strongly acid and if evaporated to dryness, reddish yellow granules of fatty acid are visible under the microscope

The colorless condition of the soap solutions immediately after the addition of the Sudan III and the gradual reddening of the mixture must be attributed to the same reaction previously described where the soaps slowly undergo hydrolysis and the fatty acids formed thereby gradually assume the stain which eventually colors the solution a deep red In other words the deep orange red color is not due to the soaps which have taken up the stains but rather to the fatty acids formed by hydrolysis and temporarily held in solution by the soaps.

CALCIUM SOAPS

To a quantity of the original reddened aqueous solution of the soluble soap a quantity of absolute alcohol was added sufficient to raise it to a 70 per cent alcohol solution When this alcoholic solution was treated with a soluble calcium salt a pinkish white precipitate appeared at the end of twenty-four hours, the supernatant fluid remaining deep orange red The precipitated substance was filtered off, when dried it appears white and very fluffy in consistence It is insoluble in water but dissolves in chloroform when a few drops of a mineral acid are added The precipitate is, therefore calcium soap which does not take the stain with Sudan III

In order to prove this point more decisively attempts to stain calcium soaps were made in another manner Calcium soaps were prepared by the precipitation of the soluble soaps—sodium stearate and oleate—with a soluble salt of calcium The collected precipitate was thoroughly washed with water to remove soluble salts and afterward with alcohol to remove traces of fatty acids In the case of the stearate a finely granular opaque white salt was obtained, while with the oleate compound a rather gelatinous material resulted

A relatively large quantity of the insoluble calcium stearate was suspended in an absolute alcohol solution of Sudan III As has been previously shown calcium soaps are rather insoluble in cold absolute alcohol The suspended material now filtered off, appears pinkish white Washed with absolute alcohol the pinkish color disappears and is imparted to the wash alcohol The insoluble soap remains opaque white The pinkish color of the soaps treated with Sudan III is not due to real staining but is produced by a mere mechanical mixture of the dissolved stain and the insoluble compounds Attempts which were made to stain these soaps by methods outlined below were also fruitless

NEUTRAL FATS AND LIPOIDS

It was deemed extremely important to determine if Scharlach R and Sudan III could be used as differential stains for the various fats and lipoids Several methods of demonstrating this were tried For example, the examination of frozen sections of colloids (gelatin, celloidin) and of various fresh and dehydrated animal tissues impregnated with solutions of the fat and lipoids to be examined These methods were abandoned in favor of the following, which seemed to be more applicable to the problem

To solutions of fats and lipoids Scharlach R and Sudan III respectively were added The resultant clear solution was thrown into water and the fats precipitated out of their original solution This method we considered relatively successful because of the ease with which the stained fat can be separated from the solvent While the fats are fairly soluble in alcohol and ether they dissolve much more readily in chloroform which is also an excellent solvent for Sudan III and Scharlach R. Chloroform also will not mix with water, that is, it is insoluble in that liquid

If, therefore, a chloroform-Sudan III solution of a fat is added to water the fat will precipitate out, so will the chloroform, although both may be colored red, the fat rises to the surface of the fluid while the chloroform settles to the bottom, allowing an easy differentiation The chloroform, however, must be removed by evaporation with heat before one may say definitely that the red globules are the fatty compound and not the chloroform In this method a portion of stain remains adherent to the floating fat, while most of the insoluble stain is suspended through the fluid It is necessary, therefore, that this fat be not filtered but skimmed off, redissolved in the solvent and reprecipitated several times-in order to be certain that the red color is due to the fat alone and not to any of the insoluble stain which may have been accidentally caught in the suspension This method, although a cumbersome one, has been found most excellent for determining the staining power of various fats and lipoids The same method may be used when alcohol is employed as a solvent

In his original communication Klotz expresses a preference for Sudan III, for while he found that Scharlach R stained more intensely, staining with Sudan III was more satisfactory in that the precipitation of crystals from the saturated solution was more easily obviated In the method which I adopted this difficulty was not encountered Scharlach R and Sudan III were used interchangeably No differences were noticeable in fats and lipoids stained with either Scharlach R or Sudan III except differences which would distinguish the original alcohol solutions Scharlach R stains fats more intensely, the red being much deeper and more pronounced Fats stained with Sudan III assume more of a deep orange-red color The staining of fats by these dyes is dependent on the fact that these dyes are more soluble in the fats than in the solution in which they are originally dissolved

FATTY ACIDS

Pure oleic, palmitic and stearic acids were employed in the following experiments

Oleic Acid—To a definite quantity of oleic acid a small amount of Sudan III in substance was added, solution occurred immediately and the liquid oleic acid was colored a deep red This color was much more intense than that of the saturated 70 per cent alcoholic solution When the oleic acid was filtered into distilled water it separated as deep red opaque globules Repeated solution and reprecipitation failed to cause the acid to lose its deep red color

Palmitic Acid—The acid was dissolved in absolute alcohol and Sudan III added The solution was now filtered into distilled water The acid thrown out of solution was not nearly so deeply tinted as the oleic acid and appeared light red in color If the fluid on which this reddish fatty acid material was floating is heated to about the boiling point the fatty acid melts into globules which take on an intensely red color exactly similar to that obtained when the stain was dissolved in the oleic acid On cooling the acid separated out as firm red globules This material collected and redissolved in absolute alcohol was filtered again into distilled water The fatty acid which now separated out appeared almost white, the slight pinkish color being due to the color of the fluid in which it was suspended If, however, pure palmitic acid is heated to its melting point and a few particles of the Sudan III are added the acid dissolves the stain and the fluid takes on the deep red color which was noticed in the case of the oleic acid

Stearic Acid—The same results were obtained with this acid

CHOLESTERIN

This substance obtained in pure form from gallstones was treated by the same method The first precipitate appeared deep red, but further solution and re-precipitation removed all the color until the final material was almost a pure white If cholesterin is raised to its melting point and Sudan III in substance is added the fluid cholesterin dissolves the stain and takes on the same deep red color noticed with the oleic acid and fluid palmitic acid This indicates that only when cholesterin is in a fluid state will it take the stain

NEUTRAL FATS

Neutral fats were obtained from both mutton and beef suet Treated in a manner similar to the other fats, the neutral fluid or semi-fluid fats retained their deep red color after repeated precipitations

LECITHINS

Lecithins were prepared from the yolks of eggs and from brains dehydrated with dried calcium sulphate A quantity of egg lecithin dissolved in a chloroform solution of Sudan III was added to water The deeply red-colored chloroform fell to the bottom of the vessel On removal of the chloroform by heat over a water bath, the stain came out of solution and suspended itself in the fluid the lecithin, on the other hand assumed a swollen pasty condition like a stiff emulsion which retained a distinct salmon-yellow color This gelatinous material, which could be lifted out of the solution on a stirring rod, was transferred to fresh amount of distilled water in which it then dissolved, coloring the aqueous fluid a light yellow pink[4] This indicates that lecithin in solution has the power to stain feebly

In a second experiment with lecithin a quantity of a chloroform solution obtained from dehydrated brain was added to Sudan III solution The filtered solution was allowed to evaporate spontaneously and the residue examined under the microscope Everywhere orange-red globules (lecithin) were interspersed among a yellowish granular material Lecithin stained with Sudan III after impregnation in gelatin also took a salmon-red color It is obvious, therefore, that lecithin in substance, like the neutral fats, will take and retain the stain

From these observations it may be concluded that the staining of solutions of the soluble soaps by Sudan III is due to their hydrolysis into fatty acids in which bodies Sudan III and Scharlach R are soluble and which are, therefore, colored by them

After repeated solution and re-precipitation oleic acid and the neutral fluid fats stained by Sudan III retain their original deep red color Palmitic and stearic acids and cholesterin, on the other hand, become decolorized by this process and, therefore, can not be stained by these bodies Lecithin gives a salmon-red color when stained with Sudan III This is interesting because it places lecithin, so far as staining reaction is concerned, between the fluid fats and the soaps and solid fats

According to Michealis,[5] the staining of fats by Sudan III is purely a physical and not a chemical process, but he admits that the physical properties of a body depend on its chemical character He considered the union between Sudan III and oleic acid a physical one depending on the property of the unsaturated fatty compound in becoming oxidized While this may be an explanation for the retention of the stain by the oleic acid neutral fats and perhaps lecithins containing oleic acid radicals and the non-retention by the palmitic and stearic acids, the fact that other crystalline lipoids like cholesterin act similarly to the crystalline fatty acids suggest that the question as to the staining of the substance depends on its physical condition entirely

This is particularly emphasized in the experiments with palmitic and stearic acid and cholesterin, where it was shown that when these substances were transformed by heat to their fluid condition they dissolved the stain immediately On return to their solid state, however, they refused to retain the dye Again those fatty compounds which at room temperature are fluids or semi-fluids are those which hold the stain even after repeated solution and reprecipitation

This explains the cause of the discrepancies in the statements of various authors[6] as to the staining of fatty acids with Sudan III or Scharlach R

It is believed that the results obtained warrant the statement that only those compounds of a fatty nature take these stains when they possess the physical characteristics of a fluid or semi-fluid at room temperature, other substances which allow of liquefaction by increase of temperature also react to the dye when in their fluid state Such substances are butyric acid, oleic acid, triolein tributyrin and lecithin Palmitic and stearic acids and their neutral glycerids and cholesterin come into this group when the temperature is above their melting point

The results show that neither calcium nor sodium soaps, palmitic nor stearic acids will at room temperature take the stain with Sudan III or Scharlach R hence the material staining by these substances which Klotz described as occurring at certain stages in calcareous degeneration can not be any of these compounds In all probability it is a mixture of oleic acid triolein and lecithin This agrees with the findings which I have reported as a result of the chemical analysis of aortas in various stages of calcification

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[4] Koch Zeit f physiol Chem 1903 xxxvii 151

[5] Ueber Fett Farbstoffe, Archiv f Path Anat und Physiol 1901 clxiv 263

[6] Daddi (L) Nouvelle méthode pour colorer la graisse dans les tissue Arch Ital de Biol 1896, xxvi 142 Rieder (H) Ueber die Verwendbarkeit des Farbstoffes Sudan III in der klinischen Mikroskopie Deutsch Arch f klin Med 1897 lix 444 Handwerck (C) Beiträge zur Kenntniss vom Verhalten der Fettkörper zu Osmiumsäure und zu Sudan, Zeitschr d Wissensch Mikroskopie, 1898, xv 177

GENERAL CONCLUSIONS

1 The so-called proteid-soap compound of Klotz is not a true chemical combination, but a mixture made up mainly of fatty acids with small amounts of calcium soaps and globulin

2 Sudan III and Scharlach R stain substances of fatty nature only when they are in fluid or semi-fluid As oleic and butyric acid, triolein, tributyrin and lecithin are in this state at room temperature they form a group to which must be limited the application of microchemical methods

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THE METHOD OF DETERMINING THE TOTAL AMOUNT OF THE FECAL BACTERIA BY WEIGHT AND ITS CLINICAL SIGNIFICANCE *

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The most accurate method of estimating the total amount of bacteria in the feces is that devised by Strasburger,[1] which determines the actual dried weight of all the bacteria whether living or dead

Attempts to form an idea of the proportion of bacteria in the feces by plating a given quantity and then counting the colonies is inaccurate for several reasons—principally because a large proportion of the intestinal flora die in their passage through the colon and only a relatively small number of micro organisms can be cultivated from the stool Moreover, the different portions of a stool are far from homogeneous and what is true of one portion will not be true of another

It must be remembered that results obtained by Strasburger's method are entirely quantitative No distinction is made between the putrefactive and fermentative bacteria, but the whole bulk of the intestinal flora, living and dead, is measured Which form of bacteria predominates must be ascertained by other means, chiefly by cultivation, although Ehrlich's aldehyd reaction and the reaction of the feces to litmus may be of some assistance.

Through the use of Strasburger's method various facts have been determined concerning the intestinal bacteria, of which many are new and some are at variance with the received ideas of the physiology of the intestines

DIET AS A FACTOR

The diet is probably the most important factor in determining the amount of bacterial growth in the intestines Foods that are easily digested and well absorbed comparatively early in their passage through the gastro-intestinal tract leave little or no residue on which the bacteria can live—consequently under such a diet the bacterial count will be low under almost any circumstance When the diet contains foods which are hard to digest and in which the residue is large the reverse is the case Consequently the sort of diet must always be taken into consideration in interpreting the amount of fecal bacteria This is easily seen in Table 1, consisting entirely of normal cases The following is a summary

Full home diet gave 18 1 to 20 5 per cent. bacteria
Full hospital diet gave 18 2 to 21 1 per cent bacteria.
Semi liquid hospital diet gave 15 6 per cent bacteria
Milk diet gave 13 2 per cent bacteria

The great influence that diet has on the intestinal bacteria suggests that the best remedy for excessive bacterial action in the bowel is modification of the diet

TABLE 1—NORMAL CASES

Sex and Age.	Diet.	Stool	Per Cent Bacteria	Grams per Diem	Length of Observation
1 Male 38 yrs	Full home diet	Formed alkaline, brown	20 5	7 4	3 consecutive days
2. Same case	Same	Same	18 1	7 4	4 consecutive days
3 Male 30 yrs	Full hospital diet	Formed, alkaline	19 1		2 consecutive days
4 Same case	Milk diet, 2 qts daily	Formed alkaline brown	13 2		2 consecutive days
5 Female, 45 yrs	Semiliquid hospital diet	Formed, alkaline	15 6	2 2	3 consecutive days.
6 Male 30 yrs	Full hospital diet.	Formed alkaline	21 1	4 9	Same
7 Female 40 yrs	Full hospital diet	Formed	18 2	2 7	Same

NATIONALITY AS A FACTOR.

The percentage of bacteria in the feces of American subjects taken from hospital patients and normal persons of the more prosperous class—professional men and private patients—is lower than that given for Germans by Strasburger, who says that he finds that a quarter to a third of the dried weight of the stool is bacteria This difference in our results is probably to be explained by the fact that the diet is not the same in the two countries Further investigations in America may show that classes of society who employ coarse foods may show a higher percentage of bacteria In any event the proportion of bacteria in the feces is probably higher than has been usually supposed and this must be considered in estimating the total nitrogen of the stool The presence of bacteria would furnish an amount of nitrogen that would lead to very confusing results in metabolic work unless the amount of bacteria present was determined and allowances made for this source of error

BACTERIAL INCREASE

The bacteria of the feces are *increased*

1 In conditions in which there is excessive bacterial growth in the stomach, such as achylia with diarrhea one such case showed 38 per cent The great influence of a modification of diet in restricting bacterial growth under these circumstances is shown by a case of carcinoma of the pylorus with partial obstruction in a woman of 60 years There was a great amount of putrefactive and fermentative change in the stomach, with considerable retention but not complete obstruction Notwithstanding the number of micro-organisms that must have escaped into the bowel through the pylorus the bacteria in the stool were but 3 per cent, showing that not enough food-material came through the pylorus to per-

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-eighth Annual Session held at Atlantic City June 1907

* From the Clinical Laboratory of the Presbyterian Hospital in Philadelphia

[1] Strasburger Ztschr f klin Med 190- xlvi 5 and 6 1903 xlviii 5 and 6

mit of much bacterial growth in the bowel Later, when the pylorus became more patulous (probably through the separation of a slough) and the retention disappeared, the bacteria rose to *22* per cent

2 In two cases of hyperacidity—one with diarrhea—the bacteria went as high as 28 5 per cent on a hyperacidity diet containing a large proportion of proteid and fat *and consequently* with little residue I believe this represents a high proportion of bacteria for such a diet This increase in bacterial growth in hyperacidity may be due to insufficient digestion or to the chemical irritation of the excess of HCl The reason why a chemical irritant, that is in itself an antiseptic (as HCl), may be associated with abundant bacterial growth in the intestine may be explained on the assumption that the normal intestine has a certain power of self-protection against bacteria Whether this power lies in the intestinal wall, as suggested by Schultz [2] or in the antagonism that the colon bacilli of the bowel offers to excessive growth of other micro-organisms (Herter[3]), I do not know But there seems to be good reason to believe that the normal intestine does possess some such protective power and that anything that interferes with the normal functions of the bowel will probably disturb this inhibitory property Consequently an excess of HCl may favor bacterial growth for the reasons just given

3 Poor starch digestion in one case gave 27 per cent When the starch of the diet was reduced in quantity to one-half of what it had been the bacteria fell to 14 per cent The reaction of the stool in this case was strongly acid

4 The bacteria were increased in one case of chronic cholecystitis to 38 per cent (full diet) One case of gumma of the pancreas gave 22 per cent (liquid diet) Both of these diagnoses were confirmed by operation, two cases of intestinal indigestion showed high percentages of bacteria

5 The growth of the intestinal bacteria is increased by the administration of various so-called intestinal antiseptics [4]

BACTERIAL DECREASE

The fecal bacteria are decreased in amount·

1 In diets leaving small residues, for reasons given above

2 In uncomplicated constipation usually spoken of as atonic Schmidt and Strasburger have shown that in uncomplicated constipation the ingested food is too thoroughly absorbed in its passage through the gastrointestinal tract, consequently very little residue is left on which the intestinal bacteria may grow, and as a result the proportion of bacteria in the feces is reduced to 10 per cent or under Schmidt suggests that the products of bacterial action, such as gases and various aromatic substances, may be necessary stimulants for the normal activity of the intestinal muscles, and when this is absent constipation results I am inclined to agree with Schmidt that certain forms of constipation may be caused in this manner Other cases of constipation showed no diminution but an increase of bacteria (Table 2)

3 The intestinal bacteria are not increased in jaundice If the older idea and teaching was true, namely, that bile is an antiseptic and that one of its functions is to prevent excessive bacterial activity in the intestine, then we would expect the bacteria to grow more luxuriantly when bile is absent from the intestine This is not the case, however In one case of gallstones and jaundice the bacteria were much diminished (see Table 3 Case 1) Strasburger says that in his cases of simple jaundice the bacteria were very low I am inclined to believe that the reduction in the bacteria in jaundice occurs because the diet is usually reduced in such conditions and not because the absence of bile inhibits bacterial growth

TABLE 2—INTESTINAL BACTERIA INCREASED

Age and Sex	Clinical Diagnosis	Date	Diet	Stool.	Per Cent	Grams per Diem
1 Female, 25 yrs	Hyperacidity 5?-31 very constipated gastroptosis and dilatation	Oct. 26	Eggs and milk	Hard, scybalous.	25 3	
2 Female, 35 yrs	Achylia with diarrhea	Oct. 26	Light mixed diet	Badly digested, lumpy, soft.	30 4	
		Oct 27	Same	Same	20 7	4 1
		Oct 30	Same	Same	38 0	5 4
		Oct 31	Same	Liquid	30 2	
3 Male, 48 yrs	Chronic cholecystitis operation anacidity, no jaundice	Nov 7	Schmidt	Formed	32 3	
		Nov 8	Same	Same	20 0	
4 Male, 45 yrs	Poor starch digestion neurasthenia, hyperacidity, starch reduced ½	Feb 4	Hyperacidity	Foul, liquid, acid	27 0	
		Feb 8	Starch reduced	Neutral	14 0	
5 Female, 60 yrs	Abdominal pain and flatus		Full home diet.	Formed and brown	26 4	3 4
6 Male, 30 yrs	Gumma of pancreas, operation, no jaundice		Milk toast, oatmeal	Brown, formed, neutral offensive Bile slight Fat not noticeable	22 1	4 05

TABLE 3—BACTERIA DECREASED

Age and Sex	Clinical Diagnosis	Diet.	Stool	Per Cent
1 Male, 52 yrs	Gallstone colic, jaundice, all symptoms mild	Milk and eggs	White, pasty, acid, much fat, no bile	2 0
Same	Still jaundiced	Full diet	Alkaline, brown, bile present.	10 5
2 Female 25 yrs.	Chronic constipation period of passage 4 hours, atonic constipation."	Schmidt	Brown, formed, hard microscopically no food remnants	9 82

4 Certain intestinal antiseptics reduce the growth of the intestinal bacteria decidedly In my own experience this result has been obtained by the use of bismuth salicylate and betanaphthol given by the mouth in normal persons Because this result was obtained in normal individuals it does not necessarily follow that the same result would be obtained in cases in which the functions of the intestines are disturbed Indeed, as I have said, it has been the experience of others as well as myself that various antiseptics given under such circumstances increase rather than diminish the growth of the intestinal flora [5]

THE TECHNIC OF THE METHOD

The possibility of separating the bacteria from the rest of the feces depends on the fact that the bacteria are so nearly of the same specific gravity as distilled water that they can not be centrifugalized out of a watery suspension of the feces, but remain suspended in the supernatant fluid Taking advantage of this the bacteria can be removed by washing with the centrifuge Then if the specific gravity of the wash-water is lowered by the addition of large amounts of alcohol the relation of the bacteria to the fluid is changed to such an extent that the micro-organisms can be readily centrifugalized out, separated, dried and weighed

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[2] Schütz (R) Archiv f Verdauungskrank 1901 p 58

[3] Herter Bacterial Infections of the digestive tract New York 1907

[4] Steele (J Dutton) Experimental Observations on the Value of Intestinal Antiseptics, Trans of Assn of Am Phys, 1907

[5] Schmidt and Strasburger Fæces des Menchen, second edition Berlin 1905 4 also Steele loc cit.

Unless the period of passage of the feces has been ascertained to be normal it is better to mark the beginning and end of each period of examination by carmin The use of the Schmidt diet is not necessary Indeed, I have found that this diet is not desirable because it leaves very little residue and so of itself reduces the total amount of bacteria to a lower point than that which is usually found

The whole stool is saved Unless the feces are liquid they are rubbed up with a known amount of distilled water until they are smooth and semiliquid and as homogeneous as it is possible to make them This is a modification of my own, intended to make it easier to obtain a specimen of the stool that is fairly indicative of the average amount of bacteria contained in each cubic centimeter Strasburger takes out but 2 c c of the formed feces It seems to me that since the different portions of the stool differ so in consistency and composition this method of Strasburger leads to considerable error I believe that this modification insures a much more accurate idea of the total bacterial content of the stool

Two portions of 5 c c are measured off with a pipette of large caliber I use for this purpose an ordinary 5 c c pipette with the tapering end cut off and with the necessary correction made at the upper mark One of these portions of 5 c c is put into a porcelain dish and dried over a water bath and later in a drying oven in order to determine the dried weight The addition of a little alcohol and thorough mixing will hasten the process of drying and prevent caking of the feces

The second portion is washed free from bacteria This is done as follows The wash-water is 0 5 of 1 per cent HCl solution in distilled water The acid increases the solubility of the salts and soaps of the feces I usually employ about 100 c c of this solution at the beginning of the washing The feces are thoroughly mixed with the wash solution and then centrifugalized The use of the water motor or electric centrifuge is almost essential Each tube is centrifugalized for about one and one half minutes, then the cloudy supernatant liquid is poured through a layer of gauze This fluid contains the bacteria in suspension All of the mixture (the wash water and the feces) is centrifugalized the same way and then the residue in the tubes is shaken up with more of the wash water and centrifugalized again This is repeated until the supernatant liquid after the centrifugalizing is transparent, showing that approximately all the bacteria has been washed out If a smear is made of the residue at this point it will be found that the bacteria are not entirely washed away, but are evidently very much reduced They occur singly, while in the unwashed feces they are in great lumps and masses I do not believe that it is practicable or even possible to wash the feces entirely free of micro-organisms

Strasburger recommends that the wash water be centrifugalized for a short time at high speed in order to remove any stray particles of solid residue from the suspension of bacteria I believe this is a mistake, for if the decanting is carefully done in the first instance then, in my experience, the sediment obtained with the second centrifugalizing is composed almost wholly of bacteria which would be lost if this part of the procedure was always carried out The suspension of bacteria is then mixed with a liberal portion of alcohol and evaporated down slowly at a temperature of 40 to 50 C until it amounts to not more than 50 c c in all This takes approximately twenty-four hours It is then mixed with at least twice its volume of alcohol, preferably absolute alcohol although this is not absolutely necessary This lowers the specific gravity of the fluid to such an extent that now the bacteria readily contrifugalize out

The mixture is then centrifugalized until the supernatant liquid is quite clear This make thirty minutes or more for each tube The residue, which consists of the bacteria, is washed with pure alcohol and is shaken up with ether to remove the fat, then it is again washed with alcohol All of this washing is done by means of the centrifuge The bacteria are next washed out of the tube with a little alcohol and evaporated to dryness and dried in the oven at moderate heat, dried in the desiccator and weighed Smears of the final preparation show that it consists of bacteria with a very few minute particles of other material These particles are only visible with high power and are very few in number, perhaps two to each field of the 1/12 objective They stain with methylene blue, and Strasburger suggests that they are cellulose, which they may well be At any rate, the error arising from the inclusion of these small particles in the dried weight of the bacteria must be very small and is probably balanced by the bacteria that it is not possible to wash out of the residue in the first washing During the preparation of the bacteria the first portion of 5 c c has been dried and weighed We then know the dried weight of 5 c c, the weight of the dried bacteria in 5 c c, the original volume of the stool and the volume after the addition of a known amount of water It is then easy to calculate the data that we desire, namely, the volume of the stool its dried weight the weight of the dried bacteria and the percentage of bacteria in the dried weight

DISCUSSION

Dr Mary Gage Day, Kingston on Hudson, N Y, asked concerning Dr Steele's experiments with intestinal antiseptics, which antiseptics increased the bacteria She said that, since one is apt to give antiseptics to check fermentation, it is a practical point to avoid those which Dr Steele found to increase the bacteria

Dr J Dutton Steele, Philadelphia, said that the question of intestinal antiseptics is confusing, because no systematic work has been done on it In all the medical literature on the work that has been done with these antiseptics, using either this method or counting, Dr Steele said that he found only two antiseptics mentioned as apparently decreasing the bacteria, and they are salicylic acid and bismuth salicylate Given to normal people they caused a decided diminution of the fecal bacteria In one of Dr Steele's cases in which he gave betanaphthol, the bacteria were found to be doubled, and that is in accord with the results obtained by men working in Germany, particularly, who gave intestinal antiseptics

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Pityriasis Rosea—*Aronstam*, in the *Medical Fortnightly*, states that this disease resembles intimately ringworm of the body, presenting, however, larger crescentric and circinate lesions than ringworm The macules look yellow, do not exhibit an inflammatory zone nor vesiculation at the margin, they are but slightly scaly, and as a rule invade the trunk in preference They are non parasitic and disappear under indifferent medication within about two weeks

DIFFUSE CARCINOMA OF THE STOMACH, ESOPHAGUS AND DUODENUM *

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The most common form of carcinoma of the stomach is the one presenting a more or less sharply demarcated tumor near the pylorus Less frequently there is simply a diffuse thickening of the stomach wall with not very sharply defined margins Occasionally the latter type involves almost the entire extent of the stomach, causing a diffuse thickening of the stomach wall The former type usually has an ulcerated surface, in the latter often the mucosa remains intact When there is a very extensive involvement of the stomach in a diffuse growth the term "leather bottle stomach" has been applied, and it is not an inapt descriptive term Such cases are uncommon, and it seems worth while to place another on record, especially since in this case a large extent of both esophagus and duodenum in addition to almost the entire stomach were involved

Patient—L K, aged 62, was admitted Jan 23, 1906, to the Massachusetts General Hospital, in the service of Dr R H Fitz, by whose permission I report the case

History—Family and past history negative in so far as concerns the present trouble Habits good, neither tobacco nor alcohol indulged in

History of Illness—For the past three months the patient had had what he termed "stomach trouble," with a full feeling after eating small amounts For two months he had had pain in the epigastric region At first there were eructations of gas, now very slight There has been no nausea, but food regurgitated easily for a time after each meal This latter condition became less marked The pain continued and grew worse Vomiting occurred frequently from five minutes to one half hour after eating Vomitus was not large in amount and had not been observed to contain food eaten the day before There had been no evidence of blood in the vomitus Appetite poor, patient said he thought he vomited from one third to one half of what he ate Bowels constipated since onset of present illness Dejecta formed, firm, not ribbon like For two weeks he had been short of breath and feet and legs had been swollen He had passed but little urine for ten days He drank little water, however He urinated two or three times at night For six or seven years he had had bleeding piles The patient thinks that he has lost much weight and grown very weak during past three months

Physical Examination—A large framed, emaciated man with skin dry and slightly rough, mucous membranes slightly pale, pupils normal, tongue moist and clean, throat negative, heart not enlarged no murmurs, radial and brachial arteries thickened but not beaded Pulses synchronous, regular, slow good volume, fair tension and regular size, veins of arms and chest visible and prominent Lungs no dulness, few medium moist râles in both lower backs Abdomen full and moderately distended, with a few bluish distended veins extending upward on the chest wall Flatness in the flanks and in the lower portion of the abdomen up to within two inches of the umbilicus, shifting on turning from side to side, and with a slight fluid wave Moderate tenderness in the epigastrium especially just below the ensiform and also in both hypochondria, but more in the right No palpable masses Circumference of abdomen at umbilicus, thirty three inches Liver flatness beginning at sixth rib and extending to costal margin edge not palpable Splenic dulness 2x3½ inches, edge not palpable Kidneys not palpable A few pea and bean sized glands in groins, axillæ and neck. Moderate edema of ankles and legs up to knees Urine slightest possible trace of albumin with an occasional epithelial cell and rare hyaline cast

Lavage and Test Meal—Stomach tube was passed down for fourteen inches, where it met an obstruction and could be passed no further A large catheter was then used which passed the obstruction and about one ounce of yellowish liquid was removed There were no signs of blood An Ewald test meal was given and after one hour removed by means of the catheter The *stomach could hold nineteen ounces of water*, of which fifteen ounces could be recovered Inflation showed the lower border to lie two and one-half inches above the umbilicus The residue from test meal showed no free hydrochloric acid with Congo red or Töpfer s solution There was a weak reaction for lactic acid The guaiac test for blood was negative Total acidity was 0 2 per cent Stool showed no blood by the guaiac test and was otherwise negative

Course of Disease—January 30, an increase in abdominal fluid was noted Swallowing was difficult and only liquids and soft toast were taken Patient vomited occasionally, but the vomitus was not bloody

February 3 abdominal circumference thirty five and one half inches Much discomfort, especially at night Patient continued to grow weaker until he died February 10

Autopsy (M G H, No 1596)—Examination of body 18½ hours later, by Dr Oscar Richardson, showed a well developed, emaciated old man The peritoneal cavity was filled with thin brownish red fluid, but the peritoneum was smooth and glistening The anterior margin of the right lobe of the liver lay 3 finger breadths below the costal margin in the right mamillary line The right pleural cavity contained a slight amount, the left a considerable amount of brownish red fluid The peribronchial lymph nodes were enlarged and on section showed here and there rather large areas of grayish yellow homogeneous tissue Lungs, pericardium, heart and liver were not abnormal The gall bladder which was free from stones, was distended and was slightly distorted by adhesions about it which bound it to the intestine The common bile duct was free but just above where it extended along the wall of the duodenum it was slightly dilated and where it coursed along the pancreas and in the wall of the thickened duodenum it was slightly narrowed Pancreas, spleen, adrenals kidneys bladder, prostate, seminal vesicles and testes appeared normal

The wall of the esophagus beginning at a point about at the level of the bifurcation of the trachea was moderately thickened along its course down to the stomach The wall of the stomach was thickened and measured at the pyloric end where it was thickest, about 1 5 cm The wall of the duodenum for a distance of 4 or 5 cm was similarly thickened The stomach as a whole was thickened, and the thickening was diffuse in character, although a small portion (about size of end of thumb) of the cardia to the left of the esophageal orifice was of about normal thickness and character On section the increase in the thickness of the wall of the esophagus, stomach and duodenum seemed to be principally in the region of the submucosa, where the tissue was homogeneous, firm, gray white in color The mucosa of the stomach in several places was slightly thickened and rounded up over the thickened submucosa

The retroperitoneal lymph nodes along the aorta and pancreas were enlarged and on section their tissue was firm, grayish and homogeneous The peritoneum along the lesser curvature showed grayish, thin, plaquelike areas Cultures from heart showed *Streptococcus pyogenes*, from the liver *Streptococcus Staphylococcus aureus* and *Bacillus coli*

Anatomic Diagnosis—Carcinoma of stomach with extension into the esophagus and into the duodenum, metastases in retroperitoneal and bronchial lymph nodes and in lung (microscopic), chronic pericholecystitis, ascites, hydrothorax slight arteriosclerosis, streptococcus septicemia

Microscopic Examination—Portions of the esophagus, stomach and duodenum show a diffuse infiltration with cancer All portions of the wall of these viscera are involved, but in general the submucosa shows the greatest degree of thickening The tumor is in the form of scattered epithelial cells, here and there gathered in small masses and these are separated by a fair amount of rather edematous stroma In the muscularis there are scattered cells as well as small cell groups both within the muscle bundles and in the intervening connective tissue The individual cells are of medium size and irregular shape. The nuclei are round, oval or of irregular shape, vesicular with finely divided chromatin and often a distinctly acidophilic rounded nucleolus Mitotic figures are fairly frequent Here and there is an occasional larger mass of epithelial cells, but these as a rule show no glandular arrangement Rarely there is a distinct cell grouping, however, in form of tubular glands The mucosa seems quite intact so far as tumor growth is concerned

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* Read in the Section on Pathology and Physiology of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City, June, 1907

Sections from several lymph nodes show infiltration with the same type of epithelial cells In one there are large cell masses and here the cells are more or less fused together so that cell outlines are indistinct The general impression here, however, is that the cells tend to a flattened type Still in the masses are fairly definite gland spaces, and in other lymph nodes is found a definite tubular type of atypical glands The tumor for the most part is of the diffuse infiltrating type and only here and there suggests an origin from the squamous epithelium of the esophagus A stomach origin with extension to esophagus and duodenum seems more probable in this case in consideration of macroscopic and microscopic appearances A section of lung shows minute metastases, chiefly in the perivascular lymphatics Here in many places the tumor is distinctly of tubular gland type

In a careful search of the literature I have been unable to find a case with such extensive involvement of stomach, esophagus, and duodenum with diffuse carcinoma as occurred in this case Extensive carcinoma of the stomach, however, is not very uncommon In 791 collected cases, Welch[1] found that 61 (4 7 per cent) involved the whole or greater part of the stomach The nodular, ulcerating type of carcinoma, however, which may be very large and infiltrate much of the stomach wall, is to be distinguished from the diffusely infiltrating type which causes a very uniform thickening of the stomach wall with little or no ulceration of the mucous membrane and Welch's figures include both types The latter type constitutes a distinct group of tumors of the stomach and they are not very common At the Boston City Hospital in 27 autopsied cases of gastric carcinoma there have been none, and in fifty-six autopsied cases of the same condition at the Massachusetts General Hospital two cases of such diffuse carcinoma Of the latter one case is the one reported above The other (M G H, No 531) occurred in a man, 44 years old The stomach in this case was small, its wall generally thickened The mucous membrane showed no ulceration Microscopic examination showed in the submucosa and muscularis scattered epithelial cells, singly and in small groups

Welch[2] has reported one case in which the stomach was shrunken to the size and shape of a kidney, with thickening of all coats and without ulceration of the mucosa A second case reported by him was similar, though the primary growth was in the ovaries

Hektoen[3] described two cases, one very typical of this group, with no ulceration of the mucosa, the other with an ulcerated mucosa and perhaps not quite so typical, but still belonging to this group

Perry and Shaw[4] have collected all of the cases of cancer of the stomach, primary or secondary, autopsied at Guy's Hospital from 1826 to 1900 Among these have been included some few cases of sarcoma and the total number of cases is 306 Of these fifteen were diffuse carcinomata involving the entire, or almost the entire, stomach Of these, Cases 17 and 297, probably also Case 194, showed diffuse carcinoma of the stomach with extension into the esophagus However, there was no extension into the duodenum in either of these cases

Graves[5] and Cadd[6] each report one typical case belonging to this group Doubtless other cases have been reported, but the reports are not easily accessible Among the older writers undoubtedly some of the cases diagnosed fibrosis of the stomach were in reality cases of diffuse carcinoma without ulceration In most of the reported cases the stomach was very greatly shrunken as well as thickened Marked shrinkage, however, had not occurred in the case reported here by me.

DISCUSSION

Dr Arthur D Hirschfelder, Baltimore, asked Dr Christian whether or not in this case there was the usual anacidity of the stomach, and if there were any disturbances in the pancreatic secretion He also asked if there was imperfect meat digestion or absence of secretion or any evidence of results of it

Dr. Henry A Christian, Boston, stated that the case showed the usual picture of cancer of the stomach, with reduced acidity There was nothing especial in connection with the pancreas The tumor did not extend down far enough to block the duct from the pancreas The stools were examined, but did not show anything to suggest pancreatic disturbance, and there was no histologic evidence in the pancreas to suggest any such disturbance There was some acidity of the stomach, but no free hydrochloric acid In other words, the case was clinically like any other case of cancer of the stomach, except for the absence of a palpable tumor The most prominent feature was the moderate degree of obstruction of the esophagus by the upper portion of the tumor

THE DIAGNOSIS OF KIDNEY INSUFFICIENCY AND THE TREATMENT OF UREMIA.*

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I do not believe that uremia is caused by diseased kidneys alone, but that it is largely due to disturbances of the liver The liver makes bile and glycogen, and stores the latter and iron It also makes urea out of ammonium salts, which probably reach the liver in combination with sarcolactic acid or as lactate of ammonium Extirpation of the liver in animals almost entirely prevents the formation of urea, which excretion is replaced by the ammonium salts and perhaps by leucin and tyrosin, and death soon occurs, generally preceded by convulsions The liver has a controlling action on toxins, alkaloids and strong drugs, and it is this organ that allows a larger dose of a drug to be tolerated by the stomach than when given hypodermatically In other words, the liver is our Pasteur filter, and the blood leaves it standardized If any disease or condition interferes with liver function the system is poisoned by its inability to care for the waste products of its own metabolism, urea is diminished, and ammonium carbamate remains in the blood The liver cells prepare the decomposition metabolic products for kidney excretion, and if they do not prepare them perfectly, the kidneys are irritated and disturbed by their effort to excrete substances that are not chemically perfect for such excretion Hence malfunction of the liver will sooner or later cause irritation, chronic inflammation, and pathologic kidneys

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[1] Pepper's System of Medicine ii 561 1885

[2] Johns Hopkins Hosp Bull 1893 iv 98

[3] The Journal A. M. A., 1898 xxx 1184

[4] Guy's Hospital Reports, 1904, lviii 121.

[5] Practitioner, 1905, lxxv 172

[6] Brit. Med. Jour 1906 i, 1343

* Read at the Annual Meeting of the Connecticut Medical Society, at Hartford, May 22 23, 1907

The amount of kidney excretion depends largely on the blood pressure Anything that causes a general contraction of the blood vessels, provided the renal arteries are not constricted, will increase the flow of urine, while if the blood pressure becomes very low, as in conditions of cardiac failure or shock, there may be no excretion at all Chemical changes in the blood plasma also modify the amount of urine excreted Urea, dextrose, sodium chlorid, and various salts are diuretic because they increase the specific gravity of the plasma and the blood then seeks water from the tissues or from the gastrointestinal tract, and this increased amount of water in the blood soon causes diuresis Caffein is a diuretic because it soon dilates the blood vessels of the kidney, while digitalis is a diuretic in cardiac debility

The flattened epithelial cells lining the capsules of the glomeruli or Malpighian bodies take water and salts from the blood and pass them into the beginning of the urinary tubules The activity of these cells seems to depend on the activity of the circulation through the capillaries of the Malpighian bodies, though they may be stimulated by some drug, such as caffein Sugar and albumin are also probably excreted through the glomeruli The rodded cells in the convoluted tubules excrete urea, uric acid, creatinin, and certain salts such as sodium chlorid, sulphates and phosphates, and with these enough water to keep the salts in solution A change in blood pressure or anything that upsets the equilibrium of the circulation, whether functional or organic, climatic or nervous, will change the circulation in the kidneys sufficiently to modify the urinary excretion

It is stated that the microscope will show a marked difference in some of the epithelial cells in the glandular portion of the kidney when these cells are in activity or at rest These cells in activity show granules or grains of segregation (Renaut), and these aid chemically in picking toxins or salts out of the blood and excreting them into the urinary tubules This would seem to be an internal secretion, so to speak, and preparations from these active glandular portions of the kidneys have been fed to patients whose kidneys are defective

According to our present knowledge the glomeruli and the convoluted tubule represent the glandular portions of the kidney and each tubule may have alternating periods of activity and rest, while the other tubes of the kidney are probably excretory ducts It is quite probable that if for any reason the excretion or secretion from the glomeruli is abnormal, the secretion or excretion from the convoluted tubules below will also be disturbed If they are disturbed the first defect noticed is a diminished excretion of urea, while much disturbance of the glomeruli will allow a leakage of albumin.

According to Atwater, a normal adult at rest excretes in twenty-four hours about a quart of water in the urine, about a quart by the lungs, about a pint by the skin, and about a half pint with the feces, i e, a total of five and one-half pints of water If no water is ingested, the blood plasma soon has its specific gravity greatly increased, and in spite of taking what water it can from the tissues, its ability to act as a solvent to carry and to aid in the excretion of salts is greatly diminished If water is not ingested and foods poor in water, especially proteids and nucleins, are taken, their oxidation to urea and uric acid makes the thirst of the blood for water greater and the ability of the blood to carry nutrition and excrete waste products still less Hence a certain amount of water is absolutely necessary for proper excretion On the other hand if more water is ingested than can be excreted, the vessels become distended with blood of low specific gravity and the heart labors to circulate this increased abnormal amount of fluid If the heart and kidneys are competent, unless there is sufficient exertion to cause profuse sweating, the extra amount of water will soon be excreted by the kidneys If the heart is debilitated or the kidneys insufficient, edema and dropsy will occur Also in this hydremic condition of the blood the nutrition of the cells is interfered with, as water is not absorbed from the stomach and intestines as it should be and therefore the nutriment is not properly digested nor properly absorbed and circulated

Therapeutic conclusions are easy to draw, viz, that when the urine is diminished in amount and of high specific gravity, and the circulation is perfect, and the kidneys not badly defective, and there are no edemas, more water should be ingested On the other hand, in conditions of weakened circulation where there are edemas and where there is serious kidney insufficiency, but little water should be ingested, and, for a short period, perhaps, very little When the skin is dry and the surface tissues seem to shrivel, though large amounts of urine are passed by the kidneys, with the circulation good, and without edemas, water should be allowed in large amounts

It is, then, wrong to push water ingestion in cardiac weakness, it is wrong to push water in serious kidney defect, it is wrong to withhold water in diabetes, and the amount of water allowed in gout depends on the condition of the heart and kidneys Water should generally be given freely in high temperatures unless there are edemas, as it helps to excrete the toxins caused by the disease After chloroform and ether anesthesia, especially if they have been prolonged, a high colon injection of physiologic saline solution should be given This supplies water to the blood that has through perspiration or otherwise had its water reduced It also acts as a diuretic and tends to prevent albuminuria from renal congestion due to the anesthetic In acute nephritis water should be allowed in small amounts only, as it is badly excreted In chronic nephritis with high blood pressure large amounts of water can do nothing but increase the blood pressure and put more strain on the cardiac muscle The same is true in arteriosclerosis All of this is equally true of large amounts of milk or any other liquid

Acute nephritis and chronic parenchymatous nephritis give so many evidences of their presence that the diagnosis is unmistakable Chronic interstitial nephritis, however, begins so insidiously that we should try and foretell its probable development Cardiac lesions which cause more or less passive congestion of the abdominal organs tend to cause nephritis, and the same is true of liver disturbance We should take note of long continued intestinal indigestion which allows irritants to reach the kidneys as indicated by the appearance of indican in the urine, and these continued irritants of the kidneys can later cause chronic nephritis

A little higher blood pressure, a little increased nervous irritability and more frequent urination, with a total increased amount of urine of a low specific gravity are signals of warning Soon the urine shows an occasional hyaline cast, then an intermittent trace of albumin, and the kidney irritation becomes positive With this intestinal indigestion more toxins are produced, and reaching the liver, interfere with its perfect metabolism Less urea is formed and more uric acid and ammonium salts, and more ammonium carbamate is left in the blood, all to the disadvantage of the kidneys If with these signs there are some joint disturbances, with or without chronic endarteritis, and later arteriosclerosis, the condition called gouty is present and the kidney resulting is the gouty kidney

If the above set of signs and symptoms are allowed to persist, chronic nephritis will almost surely develop, and even if on repeated examinations of the urine albumin and casts are not found, we still do not know that the kidneys are perfect organs The twenty-four hours' urine must several times be collected and examined as to the ability of the kidneys to excrete the various salts, and the results of these examinations associated with the condition of the circulation skin, and digestive system may decide whether or not chronic interstitial nephritis is present

It must be positively stated that the absence of albumin and casts from the urine in such cases is not a proof that interstitial nephritis is not present An estimate of the nitrogen excreted in the urine in twenty-four hours seems to be the surest indicator of the kidneys' ability to functionate If small amounts of urea and large amounts of ammonium compounds are excreted in the urine, i e, the reverse of normal, the liver is at fault If there is much indican and the sulphates are increased in the urine, there is intestinal disturbance and substances are getting into the blood which will sooner or later cause liver and kidney disease

If the phosphates are much increased, especially in urine passed hours after a meal, there is probably a good deal of nervous and cerebral disturbance, while in nephritis the phosphates are generally diminished If the chlorids are greatly diminished as they are likely to be in nephritis there will probably be edema After several such examinations of the twenty-four hours' urine have been made while the patient is on a general mixed diet, it can be determined which article or class of foods, or particular salts he does not readily excrete, and such can be removed from his diet Such examinations will also show what drugs he should not take

With proper dietetic and hygienic care chronic interstitial nephritis may be postponed, and kidneys defective in parts, with the urine showing albumin and casts can recuperate As the whole kidney is often not symmetrically diseased, healthy portions of it can hypertrophy and do perfect work, while the diseased portions of the kidney either recuperate or atrophy and cease to pass abnormal urine There is no known limit to the ability of the kidneys to regenerate Hence a prognosis from the urine findings alone is difficult to make

We now recognize that a little albumin may occur in the urine without any pathologic cause Severe muscular exercise beginnings of acute infections, severe mental disturbance, temporary debility of the circulation, menstruation, skin irritations, severe chilling and cold baths may all allow albumin to appear in the urine without any kidney defect whatever

It should not be forgotten that inflammation of the prostate will cause albumin to appear in the urine and in chronic prostatitis this albumin may be constant

Persistent renal albuminuria, however, probably indicates nephritis except in the rare cases of orthostatic albuminuria It must also be acknowledged that frequently recurring renal irritation sufficient to cause renal albuminuria probably leads sooner or later to chronic nephritis Tube casts can be present without albumin, but it is often the trace of albumin that starts the hunt for tube casts

I think that we may declare that a trace of albumin in the urine, in spite of the above exceptions is never good physiology, that the term physiologic albuminuria is not a good one, that small amounts of albumin or even traces in the urine show kidney weakness or kidney irritation Kidney weakness, then, should be protected by the kind of diet and life that will use the kidneys the least strenuously, if kidney irritation, by such mental, physical and physiologic rest as to remove the condition In other words, an individual having such an albuminuria needs a proper diet and rest cure until he is over it, as continued irritation means future nephritis

Centrifuged urines will often show hyaline and sometimes granular casts in normal individuals with normal kidneys, and certainly to centrifuge a previously sedimental urine is unfair to the individual from the insurance standpoint.

Many of the same causes that produce *transient* albuminuria can cause casts to appear in the urine, as passive congestions, severe exercise, athletic tests, chillings, irritations from alcohol and drugs The cause being stopped, casts in such cases rapidly disappear

Hyaline casts can occur during acute infection, in any bowel intoxication, in jaundice, and after anesthesia and can easily occur from any simple irritation after forty years of age Though traces of albumin probably exude at the same time from the same conditions which cause these casts to form, it may not be sufficient to show in the urine Persistent casts, however even if only hyaline and even without albumin, are indicative of interstitial nephritis, though the disease may not be progressive

We must conclude that our ability to diagnose the condition of the kidneys or prognose the future does not rest on the *finding* of albumin and casts in the urine Serious nephritis may be present and repeated examinations show no casts and no albumin, although at any examination, a series having previously been negative, large amounts of albumin and all kinds of casts may suddenly appear without apparent cause I have personally seen many cases bear out this statement On the other hand, it is only persistent albuminurias and persistent finding of casts that show there is nephritis Intermittent findings or occasional findings may show only kidney irritation With continuous finding of albumin and casts the actual condition of the kidneys can only be determined by the associated symptoms, viz, by a diminished output of salts, a greatly diminished or greatly increased bulk of the urine, the latter with low specific gravity, indigestions, headaches, circulatory disturbances, and eye symptoms

According to Croftan[1] when urea disappears from the urine in uremia it also disappears from the blood, while ammonium salts are increased This carries us back to the liver where urea is produced When urea is injected into the blood experimentally it does not cause coma, but ammonium salts do When in a nephritis case uremia is imminent, as especially shown by the urea-nitrogen of the urine being greatly decreased and the ammonia-nitrogen being greatly increased, our attention should be turned to the liver and not to the kidneys, and it may be the relief of the liver by saline purgatives that improves uremic conditions We recognize that it is often dangerous to administer morphin to a nephritic patient, and yet a large amount of this morphin is re-excreted into the stomach and never was or would be excreted by even healthy kidneys, so that the mere holding back of the morphin by the kidneys is not the whole reason for its intense action. On the other hand we know that in liver malfunction morphin is badly tolerated.

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[1] THE JOURNAL A. M. A., Jan 6 1906

The high arterial tension of nephritis, and especially of uremia, is doubtless due to the toxins in the blood causing sufficient irritation to make the blood vessels contract. Many of these irritants are reabsorbed from the intestine in conditions of fermentation and putrefaction, one more reason for the proper cleansing of the bowel with cathartics and the prevention of further fermentation by a restricted diet. When constipation or maldigestion is in evidence in kidney disease the liver quickly is more and more disturbed and its ability to produce urea is decreased, the ammonium salts increase, and uremic symptoms are the result. Also, in this sluggish condition the bile is not properly liquid and more or less bilious congestion takes place. There are headaches from the bile irritation of the brain, the sclerotics and skin become yellowish and the skin, endeavoring to excrete irritants from the blood due to the insufficiency of both liver and kidneys, becomes irritated, itches and may show urticarial disturbance. From the scratching, eczematous conditions occur and if insufficient baths are taken and no massage is done the skin becomes dry and can not do its normal excretory work, and more trouble and irritation is thrown on the kidneys, and uremia is soon the outcome.

The length of time, in uremia, that the diet should be nothing but water, and hot baths should be taken, and saline purges given depends entirely on whether the symptoms become better or not, it may be twenty-four hours, it may be forty-eight, but if no improvement occurs in two days, the case is probably hopeless. If there is improvement the diet should be such that there is a minimum amount of uric acid formed and a minimum amount of urea, and again we are aiming at the liver function. Intestinal fermentation may be prevented by the administration of sodium glycocholate in half-gram doses, and perhaps no bowel antiseptic is safer, considering the kidney defect.

Cardiac tonics are rarely indicated when uremia is pending or present. On the other hand, vasodilators, as nitroglycerin, are often of great value. Too great lowering of the blood pressure however, in the chronic interstitial nephritis of old age should not be attempted, and would be pernicious if continued. The liquids and sodium chlorid given should depend entirely on the character of the circulation and whether or not there are edemas.

Whether or not there is an internal secretion of the kidneys, I have certainly seen life prolonged in nephritis by feeding fresh kidneys. I have not had much results from the nephritin tablets. Thyroid extract certainly aids in preventing convulsions in uremia and is, I believe, the most efficient preventive of that symptom.

If there is severe pain, especially in the cardiac region, morphin must be administered though theoretically contraindicated. If there is coma and other symptoms of cerebral pressure, spinal puncture may relieve them, but is rarely of any avail.

If we have positively seen a case of chronic nephritis progress gradually from bad to worse, I do not believe it justifiable to use superhuman efforts to prolong life for a day or two. On the other hand, in uremia when we are in doubt as to how far the pathology has proceeded, and in acute nephritis, we should do venesection in amount sufficient to decidedly lower the blood pressure. If the patient is debilitated and anemic this venesection may be immediately followed by a small saline transfusion.

In acute nephritis and when uremia is pending in chronic nephritis, and during uremia, high colon washings with physiologic saline solution should be done several times a day, and as hot as can comfortably be borne. The temperature may be 110 F. with a continuous return flow. A rectal tube can be passed a short distance, and with the hips elevated the water will flow readily into the colon. This hot colon douche will often relieve kidney congestion. If there is no edema, some of this solution should be left in the colon, and is one of the most efficient diuretics.

We may sum up the treatment of uremia as absolute muscle rest, the withholding of all food, not even giving milk, administering very little water by the mouth even if there is no edema, as the ability of the kidneys to excrete water, even, is often abolished, frequent colon irrigations of hot water, leaving some in the colon for absorption if the blood pressure is low and there is no edema, the administration of thyroid, hot sponging of the skin, venesection in most cases, repeated if necessary, as it has been shown that an ounce of blood will remove more toxins than eight or nine times that of fluid feces or than quarts of perspiration, and the administration of nitroglycerin if the pulse tension is high. If the uremic period is passed and the kidneys again begin to secrete and excrete, the diet and life of the patient becomes of primary importance, but that is not the object of this paper to discuss.

THE PHYSICIAN AND THE NEWSPAPER.*

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There has always been a wide difference of opinion between physicians and newspaper men as to the propriety of advertising. There has been occasional newspaper comment relative to the much talked of, but little understood, Principles of Ethics. It has been assumed that it militates against the advertising function of the newspaper because one of its principles states that "It is incompatible with honorable standing in the profession to resort to public advertisement or private cards inviting the attention of persons affected with particular diseases, to promise radical cures, to publish cases or operations in the daily prints, or to suffer such publications to be made, to invite laymen (other than relatives who may desire to be at hand) to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to employ any of the other methods of charlatans." The true physician has nothing to advertise except that which is found in the simple card which announces his presence and location in the community.

Physicians are the guardians of the health and physical welfare of the people, newspapers are the molders and often the creators of public opinion. The medical profession personally, and the newspaper fraternity, through the press, come into closer touch with the community than any other profession or calling. No other two societies of men have so keen an understanding of human nature and its desires, passions, virtues, weaknesses and faults The relations of the physician and the newspaper to the public embody great reciprocal obligations and rights

Recently the press has been giving its attention to "graft," which, in all of its ramifications in the business and political fields, does not equal the graft that has resulted from the advertising of nostrums and quacks Worse than graft are the wreck and ruin that are traceable to certain classes of advertisements, for an estimate of which one would have to journey through all the eleemosynary institutions of the land, making diligent inquiry as he traveled, listening to the story of the inebriate and dope fiend and their progeny He would have to learn from the brothel the story of mistakes corrected by crime advertised for sale between the lines of crafty advertisements, but he would have to wait until Gabriel blows his trumpet for the heart-rending tale of the innocents—and their name is legion—whose lives were sacrificed in the dim gray dawn of their early existence He would have to learn from the physician the amount of suffering, the number of surgical operations, blind eyes and other deformities, directly and indirectly traceable to advertisers who have failed to make good their guarantee to cure certain diseases in from ten to thirty days —a guarantee which every conscientious physician knows to be impossible of fulfilment.

Can not the press be made to realize that it is the ally of fraud and deceit when used as the mouth-piece of the get-rich-quick concerns that guarantee to cure the entire list of human diseases with some mysterious decoction of roots and herbs?

How long will the American press, with a few notable exceptions continue to contribute inches to the campaign against the great white plague and sell columns to the men who talk about that "hacking cough" and promise to cure consumption with some wonderful new discovery?

The fraud of these advertisements is concealed in their seductive language, which appeals to a credulous and suffering people, when read by the side of news items and high-class legitimate advertising and in connection with the editorial comment that sustains governments and so often determines their policies, the claims of the advertisers become truths to many because they are substantiated and verified by the very fact of their appearance in the medium which sows them broadcast

One wonders what the paragrapher's pen would write should he see in his paper an advertisement setting forth that "L E Gall, a graduate of the leading law schools of America and Europe, with ten years' experience in the supreme courts of both countries, is now prepared to look after the interests of all who may require his services Special attention given to criminal and civil cases He guarantees acquittal in all cases of murder, infanticide, grand and petit larceny, embezzlement, forgery, blackmail, libel and slander Divorces secured in two weeks No publicity Suitable homes provided immediately after acquittal He was never known to fail None of the lawyers in ordinary practice has the facilities for handling these cases that he has Call at once and be convinced No charge for being convinced"

It has been said that all the quacks do not advertise Just as there are "yellow journals" there are "yellow doctors" and for ways that are dark and tricks that are mean they are most peculiar That each calling contains members with whose services society could well afford to dispense should be apparent to all It may be confessed that physicians themselves have not been without blame in the matter of quackery, for had there been less quibbling between schools of practice, whose differences are now fast fading away, the way would not have been prepared for the endless string of charlatans who have found it easy to ingratiate themselves into the confidence of so many of the people

Let medical men continue to guard the public health, but let them put away their petty jealousies and frivolous contentions that open the gaps through which pretenders enter to mystify and cajole some of the most intelligent Let honorable physicians tear down the walls that separate them, let them enlist the newspapers in a righteous cause and be coadjutors in the emancipation of suffering humanity from a thraldom which has already enslaved too large a part of the human family

Every one who reads current medical literature even cursorily must be impressed by the frequent demands for a "campaign of education as the only means of fighting the nostrum and kindred evils" There is eminent authority for the statement that "it is the duty of physicians, who are the witnesses of the enormities committed by quackery and the injury to health and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors As good citizens it is their duty to be ever vigilant for the welfare of the community and to give counsel to the public in relation to matters especially appertaining to their profession"

Living as we do in a nation of newspaper and magazine readers, are we discharging our duty to society when we fail to make use of these large and powerful educational institutions? If fraud can thrive and prosper with the press for its hotbed, can it be that truth can not be planted there, to flourish and grow until the former is blighted and killed by the inherent tendency of the latter to prevail?

Instead of being so very chary about newspapers might it not be advisable to use a little of their space for the education of the people—for the exposure of fraud and the teaching of the plain a, b, c's of health, free from technical phraseology—and thereby counteract, for the present, and ultimately wipe entirely out, the columns of rot with which so many papers are filled, setting forth the great efficiency of some nostrum? It is one of the crimes of the ages that any of the great discoveries made by men of science, who have labored unselfishly, without hope of reward, and given the fruits of their labors to humanity, should be prostituted, as they are, by mendacious charlatans Witness the *x*-ray, with its great usefulness in a limited field of application and in the hands of those who are honest and sufficiently competent to make use of it, becoming the chief stock in trade of quacks There is not sufficient capital on earth to enable these adroit, advertising frauds, these execrable advisers and mercenary monsters, to ply successfully their nefarious trade against a well-directed campaign of education To be sure they will angle, possibly with new bait, but the fish will have learned to recognize the line from which dangles the hook with its dainty allurement

The public should know that behind most of the cunning advertisements and reading notices are hidden fraud and deception, and that back of these are base pretenders, who trifle with life and disease, who prey on the unfortunate and feed fat on bodily ills It does not seem possible to remedy these evils through medical journals alone The people must be reached "The members of the medical profession on whom has ever been enjoined the performance of so many important and arduous duties toward the community" will never have discharged their full duty until they have educated the people to that degree of intelligence in matters medical which shall convince them that they can receive with safety neither advice nor treatment from any other than the duly qualified and unpretentious sources where they are now wont to appeal after they have been bankrupted in health and bled to financial death by the conscienceless mountebanks into whose hands they have fallen

Even the base pretenders themselves appeal at last to the medical profession for aid Witness the spectacle of John Alexander Dowie, after having expended all the vigor of his powerful body in heaping abuse and vilification on the medical fraternity, appealing to the physician and beseeching him to hold his tottering old frame together while he endeavors to regain possession of his lost and ill-gotten gains to traduce anew his benefactors

There is but one medium through which the people can be taught, it is the same medium that has furnished the instruction for present intolerable conditions it is the greatest educational medium for the masses extant, it is the medium most eagerly sought and perused, it is the cheerful companion and indisputable criterion of almost every fireside—the newspaper

How shall we make use of this medium? Certainly not by abusing it, for it has not been shown that even the great wisdom of the newspaper fraternity is sufficient to enable them to detect the cunning cupidity of some of their advertisers Let the American Medical Association establish a Bureau of Education for the dissemination of such knowledge and advice as will enable the people of this country to act intelligently in matters pertaining to their own health and lives thereby making it possible for them to assist the medical profession in their efforts to prevent disease, relieve suffering and prolong human life Organized as this powerful association now is this bureau would be in affiliation with each state and county society and there could be such a division and subdivision of the labor incident to the writing, editing and distributing of suitable articles for publication as would make a systematic campaign of education practicable Organizations like the Austin Flint-Cedar Valley Society should also be affiliated with this bureau Every decent newspaper in the United States would cooperate in this work by giving space in its columns to be filled with true information regarding health and everything affecting it News of this kind would be of surprising and surpassing interest to readers With the friendly aid rather than the opposition of the press more could be accomplished in a short time in the way of creating public sentiment in favor of certain reforms and in matters of legislation than can be accomplished by medical journals in the next twenty-five years

As a result of public sentiment, created largely by the medical profession and the untrammelled press the pure food bill has been enacted into law In order that this law may become effective state laws must be made to conform with it There is still work for the profession and the press There is enough instructive, constructive and destructive educational ammunition stored up in THE JOURNAL arsenal of the American Medical Association, to say nothing of the other medical journal powder houses scattered over the country, soon to create public sentiment that will demand the needed state legislation if it be judiciously fired through the columns of the American press

I will not be accused of anything worse perhaps than being a dreamer for expressing the belief that it is possible to carry on such a campaign of education as will result in public sentiment demanding what the physicians have so long striven for—a Department of Health with a representative in the Cabinet of this Government

The *Ladies' Home Journal*, *Collier's Weekly* and a few other magazines and newspapers have recently taken a decided stand in opposition to the nostrum evil Some papers have refused contracts for the most obnoxious advertisements Editorially a few of the reputable newspapers are supporting the medical profession in its campaign against disease food adulteration and quackery To all of these who espouse our cause a vote of thanks is due from every medical organization on behalf of the American people, who will profit most by the press' championship for reform

In this connection and in view of courtesies extended by the medical profession to the ministry, the following item taken from a telegraphic report of the Presbyterian General Assembly for May 21 1906 is of passing interest "The 'quack medicine overture was handled by the committee on bills and overtures which recommended no action, as the church papers are private enterprises" Not even a resolution by a great body of righteous people condemning this most heinous thing Pray tell us who "handled" the committee? And who "handled' the "handle' that "handles" the "private enterprise'?

The Chicago *Sunday Tribune*, in its issue of May 20, 1906, published a significant editorial with this caption 'The Preacher and the Newspaper" Quoting Bishop Fallows, it says "The minister should use the newspaper as one of the most effective agents for assisting him in his chosen work" Are we better than the ministry, or are we worse, or what is the reason that we should entirely avoid the newspaper? By substituting physician for minister the rest of the article is apropos 'Modern society, with fast mails, telegraph, telephones and improved mechanical devices has developed the newspaper into a daily encyclopedia of information, illustration and inspiration which (should) prove one of the greatest aids in the general improvement of moral social (and health) conditions toward which the physician ever strives The individual physician makes his voice heard only by a limited number The newspaper, with its agencies for the transmission of important items to all other journals of its class, makes its influence felt round the world It is easy to make a sweeping condemnation of the newspaper if one takes its records of sin and crime (and some advertisements) for a standard and talks of the effects of this publicity of human wickedness It is easier to prove that the press has been a most powerful factor in bringing about the great reforms which have marked epochs of civilization With the friendly assistance of the press he can make his effort for humanity far more effective and so do more for the cause of his Great Master"

Will the newspaper aid the medical profession in such a campaign of education in view of the probable financial loss it means to them? Let the question be answered by an extract from another editorial printed Jan 23, 1906, in the same newspaper "There are advertisers who labor under the belief that they can silence newspapers by drugging them with advertisements, or punish them, when outspoken, by withdrawing what they call their 'patronage' No newspaper worthy of the name will be influenced by advertising conferred on it or withheld from it Attempted terrorism will simply make an independent newspaper more determined to pursue a course which it believes to be right That is the policy *The Tribune* will insist on if it shall never print another line of advertising from now until the crack of doom When *The Tribune* sells space to advertisers it does not sell its convictions"

It will require more time than is at the disposal of the present generation for physicians to counteract the influence now exerted by quackery through the medium of the press, unless they adopt some other method than that of simply dropping a word of advice into a wavering patient's ear as he hurriedly passes through the office

With the newspapers as the allies of the physicians the malady can be eradicated, root and branch, and the pen be again proved mightier than the sword The education of the masses will remedy the evil, and the newspapers will "do more for the cause of their Great Master" and further establish their title to the claim of being "the great factors for shaping public opinion, advancing reforms and accomplishing results," when they no longer add to the already alarmingly large number of hapless human beings, which they have steadily, but in a great measure innocently increased, who are being tossed about on this merciless, mercenary sea of quackery from one wave to another—now on the summit of hope, soon in the trough of despair, pausing at each port of promise only to weigh anchor and drift out on the boundless ocean of symptoms, anxiety and fear and on into the eternity of despondency

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THE OPERATION OF GASTRO-JEJUNOSTOMY AND ITS PHYSIOLOGIC EFFECTS *

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When your distinguished President of last year conveyed to me a cordial invitation to be present at this meeting of the American Medical Association, I accepted at once, thinking of the opportunity which I should have of seeing for myself and profiting from the work of the many in your country whose fame has spread across the sea When I came to seek for a subject on which to address you, however, I realized the rashness of my ready compliance So much work has been done here on that branch of surgery in which I am especially interested that I felt that, were I to dwell on any purely surgical aspect of gastric disease, I should be going over ground already familiar to you, and so should be trespassing too far on that indulgence and leniency which I have heard you so invariably extend to those who are your guests

In my Hunterian lectures,[1] delivered before the Royal College of Surgeons last year, I gave the results of some investigations into the effect of the operation of gastro-jejunostomy on the metabolism of the human body After some consideration I determined to pursue those investigations further and to lay the results before this meeting

When, as was the case but a few years back, the operation of gastro-jejunostomy was performed only as a last resort in cases of pyloric stenosis, physiologic questions were a secondary consideration, but at the present time, when the operation is frequently advised for conditions such as intractable gastric ulcer, in which it is an operation of expediency rather than of necessity, a knowledge of its precise effects on the gastric and metabolic functions of the body must be one of the determining factors in the decision for or against operation It is on this aspect of gastro-jejunostomy that I purpose to offer some observations for your consideration

THE EFFECT OF GASTRO-JEJUNOSTOMY ON THE FUNCTIONS OF THE STOMACH

The Presence of Bile in the Stomach—All observers are agreed that a certain amount of bile finds its way into the stomach after the operation of gastro-jejunostomy *It is said that the quantity* is at first fairly abundant, but after a few weeks considerably less

In my own experience it is rare to find bile in the fasting stomach, and I regard its presence under such conditions as evidence of inefficiency of the efferent opening The fluid drawn off one hour after a test breakfast often appears to contain bile, but Gmelin's test usually gives a negative result If the gastric contents be tested two hours after a test meal, Gmelin's test is frequently obtainable I use the expression obtainable advisedly, for considerable care is often requisite to demonstrate the presence of bile, although from the appearance of the gastric contents one would judge that it is present in some quantity

Indeed, I believe that the amount of bile which regurgitates into the stomach is considerably overestimated Gmelin's test does not give a positive reaction unless bile be present to the extent of about 5 per cent and the green color of the test is, as a rule, only just visible and sometimes can not be seen at all It is probable, therefore, that the regurgitated bile forms not more than 5 or 6 per cent of the stomach contents I need hardly point out that if bile gains entrance into the stomach pancreatic secretion must do so as well

Granted, then, that there is a permanent reflux of bile into the stomach after gastro-jejunostomy, the question arises, Is its presence harmful? All the evidence indicates that it is not, provided the efferent opening of the anastomosis is efficient Dastre[2] and Masse[3] have shown that in dogs the presence of bile in the stomach does not interfere with the digestion and general health The well-known case reported by Moynihan[4] as well as the results of the operation of cholecysto-gastrostomy in man, confirm these observations while the metabolism experiments, to which I will refer later, afford further evidence to the same effect Indeed, I think we may safely affirm that, in part at least, the beneficial effects of gastro-jejunostomy on gastric ulcer are due to the entrance of the alkaline pancreatic juice and bile into the stomach

The Effect of Gastro-jejunostomy on the Gastric Secretion—The most marked effect of gastro-jejunostomy is the diminution of the total acidity of the gastric contents which follows operation At first sight it would appear that this diminution is but the result of partial neutralization of the gastric contents by the bile and pancreatic juice which gain entrance into the stomach But the problem is not such a simple one

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* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City June 1907

[1] Gastric Surgery, London, 1906.

[2] Archives de Physiol 1890 ii 316

[3] Congres Francais de Chirurgie 1898, 300

[4] The Work of the Digestive Glands.

Time will not permit me to describe in detail the observations which I have made on this interesting subject, so I will briefly indicate what appear to me to be the chief factors at work

From an examination of a considerable number of cases I find that the average diminution of the total acidity after gastro-jejunostomy is about 35 per cent There are several reasons which appear to me to indicate that this diminution is not due solely to partial neutralization

First, judging by the amount of bile usually found in the stomach, the diminution is too great to be the result of a purely chemical reaction

Second, if the diminution were the result of a chemical reaction we should expect all the free hydrochloric acid to be neutralized, but this is not invariably the case In several cases I have found free hydrochloric acid present, and in those cases in which it has been present before operation it can usually be demonstrated after opertion, by giving a suitable test meal, such as Leube's

Third, there is a diminution of the total chlorids in the gastric contents which must be the result, not of neutralization, but of diminished secretion Two factors at least, therefore, appear to be at work in bringing about the diminution of total acidity which is found after gastro-jejunostomy 1, A diminution of the total chlorids secreted, 2, partial neutralization of the gastric contents by bile and pancreatic juice

The brilliant researches of Pawlow[5] and his co-workers have demonstrated the striking interdependence of the secretions of the digestive glands, and it is this interdependence which seems to me to afford us a reasonable explanation of the diminution of chlorids We may, I think, safely assume that during the churning movements of the stomach some of the gastric juice will be, as it were, squeezed through the anastomotic opening This escape of some of the acid will prevent the total acidity rising as high as would otherwise be the case But it will have a further effect The presence of an acid fluid in the jejunum causes a secretion of pancreatic juice (Wertheimer)

Thus after gastro-jejunostomy, if my hypothesis be correct, the early presence of acid in the jejunum will lead to a flow of pancreatic juice at an earlier period of digestion than in a normal individual With this earlier stimulation of the pancreas there will be a correspondingly earlier diminution of the gastric secretion, and, as a consequence of this, a diminution in the total chlorids secreted by the gastric mucous membrane Possibly other factors are at work, such as an inhibitory effect of secretin or other constituent of the pancreatic juice In those cases in which there has been hyperacidity before operation the removal of the abnormal excitation of the gastric mucosa, which results from spasmodic stenosis of the pylorus will lead to a considerable diminution of the total chlorids, and it is certainly significant that it is just in these cases of gastric ulcer with hyperacidity that the diminution of the total acidity of the gastric contents is most marked

The Effect of Gastro-jejunostomy on Gastric Digestion —Some authorities maintain that gastric digestion is lost after gastro-jejunostomy Even if this were true, it is not of such importance as would at first sight appear for we know from the experiments of Pachon and Carvalho[6] on dogs from the observations made on Schlatter's[7] celebrated case of total gastrectomy, as well as from the clinical evidence afforded by those patients who have survived complete removal of the stomach, that Nature is able to dispense with this organ There is, perhaps, nothing more wonderful in the whole range of surgery than that human beings should not only survive the operation of total gastrectomy, but should remain for years in the enjoyment of perfect health and activity I need hardly remind you that the first surgeon to conceive and carry out this daring project was one of your own countrymen

Notwithstanding, however, Nature's adaptability, the retention of gastric digestion undoubtedly adds to the resisting power of the individual in the struggle for existence Personally, I do not believe that loss of gastric digestion is a necessary consequence of a short circuit between the stomach and jejunum Those who have expressed an opposite view base their conclusions on the subsequent diminution of chlorids found in the gastric contents This argument is not conclusive, as the chlorids may be greatly diminished without the loss of gastric digestion Further, unless atrophy of the mucous membrane is advanced owing to disease existing before operation, there is, in my experience, usually a progressive increase in the chlorids secreted during the digestion of a test meal A more conclusive indication of the extent of gastric digestion can be gained from an examination of the feces Schmidt has shown that only the gastric juice can digest raw connective tissue I have on many occasions fed patients, after gastro-jejunostomy, on raw beef, but have never found any undigested connective tissue on microscopic examination of the feces

The Effect of Gastro-jejunostomy on the Motility of the Stomach —Impairment of the motility of the stomach is a much more serious matter than impairment of its secretion, for it appears that the stomach, if its peptic power be reduced, endeavors to make up for the failure of digestive power by greater energy in moving on its contents Under these circumstances the food leaves the stomach incompletely digested, but this does not seem of serious import for Von Noorden maintains that the intestine can vicariously assume the peptic functions of the stomach I have already pointed out that after gastro-jejunostomy some diminution of the gastric secretion occurs, if then it were the case that gastro-jejunostomy in addition impairs the motility of the stomach, the usefulness of the operation would be considerably curtailed

Diverse views have been expressed on this subject Hartmann and Soupault, Rydygier, and Rosenheim found the motility of the stomach permanently impaired, Carle and Fantino, on the other hand, maintain that the emptying of the stomach is hastened rather than retarded It is, I think, possible that in such investigations the existence of impaired motility before operation has not always been excluded Although motor insufficiency be present after operation, we can not assume that the insufficiency is due to operation unless we have shown the stomach to have been normal in this respect before operation

I have investigated the motility of the stomach before and after gastro-jejunostomy in a considerable number of cases but I will now refer only to three typical examples

Case 1—The first of these was a woman on whom I performed gastro-jejunostomy for repeated attacks of hemorrhage from a gastric ulcer Examination before operation showed that on an average the stomach was empty three and a half hours after a test breakfast Two months after operation a number of observations showed that the stomach was empty four hours after a similar test meal You will observe that although the motility was slightly impaired by operation, the delay in evacuation did not exceed the physiologic limits This case raises the question How does gastro jejunostomy influ ence those cases of gastric ulcer in which the motility of the stomach is not impaired? I will return to this point later

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[6] Comptes rendus de la Société de Biologie 1893 794

[7] Hofmann Münch med Wochschr, May 1898

Case 2—The second observation was carried out on a patient on whom I performed gastro jejunostomy for gastric tetany, with almost complete pyloric stenosis and greatly im paired motility Two years after operation examination showed the stomach to be empty on two occasions four hours after a test breakfast, and on another occasion, four hours after a full dinner, only 25 c.c of fluid containing a trace of bile was drawn off

Case 3—Observations on a third patient showed that before operation 20 c c of fluid remained in the stomach four hours after a test breakfast One month after operation, at which a chronic gastric ulcer with dense *adhesions* to the abdominal wall was found at the cardiac end of the stomach examina tion showed that on one occasion 15 c c, and on another oc casion 5 c c of slightly green, tenacious fluid, showing a faint Gmelin's reaction remained in the stomach three and a half hours after a test breakfast

From these and numerous other observations I think we may conclude that, in those cases in which the motility is markedly impaired by pyloric stenosis or by adhesions, the operation of gastro-jejunostomy usually results in a marked improvement in the evacuation of the stomach contents In those cases, on the other hand, in which before operation the motility is unimpaired, gastro-jejunostomy may either slightly retard or slightly hasten evacuation, but inasmuch as this retardation or acceleration falls within the physiologic limits we are justified in saying that in cases in which the motility is normal before operation *the evacuation of the stomach is for practical purposes unchanged by gastro-jejunostomy*

Is Gastro-jejunostomy a Drainage Operation?—The observations on the motility of the stomach which have already been mentioned are against the view that gastro-jejunostomy is a drainage operation, and W B Cannon and J B Blake[8] in their invaluable article also put forward strong arguments against such a supposition These writers, too, from observations on dogs by means of Roentgen rays, have come to the conclusion that in cases in which the pylorus is unobstructed the food continues to pass through the pylorus rather than through the new opening Are we justified in assuming that this holds good for a human being if the anastomotic opening is made of large size? It is at least suggestive that in the only case in Cannon and Blake's series in which the food passed out through the anastomotic opening rather than through the pylorus the opening which had been made was a large one This observation appears to me to be a most important one It emphasizes the necessity for a large anastomotic opening, which is, in my judgment the most important point in the technic of gastro-jejunostomy

To What Are the Beneficial Effects of Gastro-jejunostomy on Gastric Ulcer Due?—Most writers have assumed that gastro-jejunostomy is a drainage operation, and have attributed the beneficial effects of the operation on gastric ulcer to hastened evacuation of the stomach If this be true it follows that, in those cases of gastric ulcer in which the motility of the stomach is normal the operation of gastro-jejunostomy would be of no avail This has not been my experience I have already told you of a case in which the motility was slightly impaired after operation Notwithstanding this impairment the patient rapidly improved, lost all her gastric symptoms and has remained ever since in excellent health Indeed, some of the most striking successes I have witnessed have been cases in which before operation there was no evidence of delayed evacuation of the stomach We must therefore, I think, look for some other factor than drainage to explain the influence of gastro-jejunostomy on gastric ulcer

There is a general agreement that hyperacidity is the factor which prevents healing of gastric ulcer After gastro-jejunostomy there is a marked diminution of the total acidity of the gastric contents, which diminution does not depend on improved evacuation Are we not justified in assuming that it is to this diminution of the gastric acidity that the beneficial effects of gastro-jejunostomy on gastric ulcer are due?

THE EFFECT OF GASTRO-JEJUNOSTOMY ON THE METABOLISM OF THE HUMAN BODY

In the year 1897 Joslin[9] published some observations on the metabolism of two patients on whom gastro-jejunostomy had been performed He maintained that as a result of this operation there is a marked *diminution of the proportion of nitrogen absorbed* from the food, and an ever more marked diminution in the fat absorption These conclusions have been accepted without question In my book on Gastric Surgery, published last year, I gave details of observations on four patients in whom the absorption of fat and nitrogen was practically unaffected

There still are writers who dilate on the evil consequences of this operation and of the interference with the physiology of digestion which it entails Two years ago a distinguished surgeon wrote "It is improbable that so much interference with the anatomy and physiology of digestion as this operation involves can be tolerated without some ill effects" As recently as six months ago another writer remarked "The interference with the physiology of digestion which such an operation entails is not well tolerated" He then pointed out the necessity for the existence of the acid medium of the stomach with its pepsin for the digestion of the fat cells and starch granules

I have already pointed out to you the evidence that connective tissue digestion continues after gastro-jejunostomy, and I will now endeavor to prove, from the further observations which I have made, that these hypotheses about interference with the nutrition of the body are unsupported by chemical pathology or clinical experience Indeed, it was the remarkable evidence I obtained in investigating the remote history of a large number of patients on whom gastro-jejunostomy had been performed which led me to doubt the accuracy of Joslin's conclusions and to test their correctness by the touchstone of experimental demonstration

CLINICAL OBSERVATIONS

Observation 1—This was carried out on a man aged 20, five months after I had performed anterior gastro jejunostomy for gastric ulcer During the four days which the observation lasted, the patient absorbed 91 per cent *of the nitrogen* taken in his food and 92 3 per cent of the fat Now in a series of metabolism experiments on 75 apparently healthy individuals on a mixed diet, Harley and Goodbody *found that the* highest nitrogen absorption amounted to 97 07 per cent and the lowest to 90 1 per cent of the nitrogen taken in the food, the average absorption being 93.46 per cent. of the nitrogen taken in the food. As regards fats, Harley and Goodbody found that the highest absorption amounted to 98.5 per cent., and the lowest to 90.19 per cent. of the fat taken in the food, the average absorption of 79 observations being 95.05 per cent. If you will compare the results of my observation after gastro-jejunostomy, you will see that the nitrogen absorption is only 2.4 per cent. below the average, and the fat absorption 2.7 per cent. below the average, and both nitrogen and fat absorption are higher than the lowest absorption found in a healthy individual.

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[8] Annals of Surgery, May, 1905.

[9] Berl klin. Wochschr, 1897, 1047

OBSERVATION 2.—This observation on a patient (also on a mixed diet) seven months after gastro-jejunostomy and suture of a perforated gastric ulcer, showed a nitrogen absorption of 90.5 per cent., and a fat absorption of 92.5 per cent. Comparing these figures with those which I have quoted from Harley and Goodbody, you will observe that the nitrogen absorption is 2.9 per cent., and the fat absorption 2.5 per cent. below the average, but both nitrogen and fat absorption are above the lowest percentages found in healthy individuals.

OBSERVATION 3.—This was made on a patient on a mixed diet two years after gastro-jejunostomy for gastric tetany, and I may mention for the interest of those who regard the functions of the duodenum with reverence, that there existed complete obstruction of the pylorus, so that the food could pass only through the anastomotic opening. During four days on a liberal mixed diet (40 kilograms for each kilogram body weight) the patient absorbed 92.1 per cent. of the nitrogen taken in the food, and 92.7 per cent. of the fat. In other words, the nitrogen absorption was 1.3 per cent. and the fat absorption 2.3 per cent. below the average, both nitrogen and fat absorption being above the lowest absorption found in healthy individuals.

OBSERVATION 4.—This was carried out on a patient on a milk diet one month after gastro-jejunostomy for gastric ulcer. The nitrogen absorption amounted to 92.7 per cent. of the nitrogen in the milk taken, and the fat absorption 94.7 per cent. Compared with the average absorption of a healthy person on a milk diet, these figures show a diminished nitrogen absorption of 1.5 per cent. and a diminished fat absorption of 1.4 per cent., both nitrogen and fat absorption being higher than the lowest percentage absorption found in a normal individual.

OBSERVATION 5.—This was made on a patient on a mixed diet, one month after gastro-jejunostomy for pyloric stenosis. In this instance 92.4 per cent. of the nitrogen and 93.5 per cent. of the fat taken in the food was absorbed, the figures being 1.0 per cent. and 1.5 per cent., respectively, below the average, but both well above the lowest normal absorption.

The preceding observations were made on patients on whom anterior gastro-jejunostomy had been performed; the remaining four observations were carried out on patients on whom I had performed the posterior "no-loop" method.

OBSERVATION 6.—This was carried out on a patient on a milk diet one month after gastro-jejunostomy for gastric ulcer. The nitrogen absorption was 91.2 per cent. and the fat absorption 92.3 per cent. of the fat taken in the food, that is, the nitrogen absorption was 3.0 per cent. and the fat absorption 3.8 per cent. below the average.

OBSERVATION 7.—This was made on a patient on whom I had performed gastro-jejunostomy for duodenal ulcer with partial stenosis and who was on a milk diet. The nitrogen absorption was 92.2 per cent., and the fat absorption 95.4 per cent., that is, the nitrogen absorption 2.0 per cent. and the fat absorption 0.7 per cent. below the average absorption on a milk diet in a healthy individual.

OBSERVATION 8.—This was made on a patient on whom I had performed gastro-jejunostomy for gastric ulcer. The patient was placed on a milk diet and the observation lasted seven days. During this period the man absorbed 93.5 per cent. of the nitrogen and 94.1 per cent. of the fat taken in the food. In this case the nitrogen absorption was 0.9 per cent. and the fat absorption 0.9 per cent. below the average.

OBSERVATION 9.—This, too, was made on a patient on a milk diet twenty-four days after gastro-jejunostomy for gastric ulcer. In this patient 92.4 per cent. of the nitrogen and 96.8 per cent. of the fat taken in the food were absorbed, a diminution of 1.8 per cent. in the case of the nitrogen, and in the case of the fat an increase of 0.7 per cent. above the average.

Taking the whole series of nine observations, the average diminution of nitrogen absorption is 1.7 per cent. and the average diminution of fat absorption 1.9 per cent., while in every instance the variation is within the limits found in individuals who are in good health.

It may be urged that in those cases of this series in which there was no pyloric stenosis the food passed out through the pylorus rather than through the anastomotic opening. If this be true, although I am not prepared to admit it, it does not affect the conclusions to be drawn from the observations. We know clinically that gastro-jejunostomy has a very beneficial effect on gastric ulcer. This effect is probably due to the diminution of the acidity of the gastric contents which the operation brings about. Which route is taken by the food is a matter of academic interest, as it does not affect the therapeutic value of the operation. The important point is that the short circuit does not appreciably affect the metabolism whether the pylorus be patent or not, for you will observe that in those patients who have marked pyloric stenosis the absorption after operation is as good as in those in whom the pylorus is patent.

It is interesting to look back and observe how incomplete knowledge leads to the formation of erroneous hypotheses, and how as knowledge progresses facts apparently irreconcilable become reconcilable. Pawlow showed that the injection of acid into the duodenum causes a flow of pancreatic juice and that the acid chyme passing through the pylorus acts in the duodenum as the normal stimulus of the pancreatic gland. Herein apparently lay the cause of the loss of fat absorption which was supposed to follow gastro-jejunostomy.

Since after this operation the food passes directly into the jejunum, it was urged that the normal stimulus of the pancreas is absent, and that consequently there is a diminished flow of pancreatic juice, and as a result of this serious impairment of fat absorption. Now, Wertheimer has shown that the flow of pancreatic juice can be excited by the introduction of acid into the jejunum, and more recently Bayliss and Starling[10] have demonstrated that the stimulus is not a reflex one, but due to a substance which they call secretin, which is conveyed to the pancreatic gland through the blood stream. Therefore, both the hypotheses as to the diminished fat absorption and as to the cause of this supposed diminution are now shown to be erroneous. The physiologic and chemico-physiologic facts as we know them agree, for I hope that I have been able to prove that the digestion and metabolism of the human body are practically unaffected by the operation of gastro-jejunostomy, while the researches of Wertheimer and Bayliss and Starling tell us why the alteration of the route taken by the chyme does not prevent adequate stimulation of the pancreatic gland. Is it not a striking example of the wonderful power which Nature possesses of adapting herself to the altered conditions brought about by surgical intervention?

These experimental observations are supported by the evidence of clinical experience. May I remind you of one striking fact As I have pointed out before, there are at the present time children alive and in perfect health on whom this operation was performed in early infancy It is inconceivable that they would have lived for six or seven years and developed into strong healthy children had the operation the harmful effects which have been attributed to it

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[10] Proceedings Royal Soc., 1902, 352.

Lastly, let me say this Just because gastro-jejunostomy is not in itself harmful, there is a danger that we may be tempted to resort to it in doubtful cases in the hope that good may come Great as is my respect for gastro-jejunostomy, I am no advocate of such a course To operate for subjective symptoms in the absence of definite clinical and chemical signs is, to say the least unscientific Above all, we must guard against the failure and discredit which results from operation on neurasthenics and on those patients who, as Dr W J Mayo so pithily puts it, "have had their movable organs fixed and their removable ones removed" Such persons, as we all know, are often only too ready to tempt fortune further at the shrine of surgery Neither gastro-jejunostomy nor any other surgical procedure short of the removal of the higher centers of their brains will cure such of their ills

The technic and statistics of gastro-jejunostomy I do not purpose to discuss They have been recently fully dealt with in addresses delivered before this association If you will allow I should, however, like to bring to your notice two time-saving devices which I have found of great value The first is this set of suture reels Each reel is of a different length so that the different sizes of silk or thread are wound on different sized reels, and the surgeon is able to see at a glance without examination of the suture material, which size of ligature he requires during the course of the operation.

The other device is this pattern of needle, which may be called a "grip eyed' needle It is designed to obviate the inconvenience and delay caused by the accidental unthreading of needles during suturing, and is especially adapted for continuous suturing By pulling the suture firmly into the extremity of the eye furthest from the point the thread is firmly gripped so that it can not slip out

SUMMARY

To sum up, we are, I think, justified in drawing the following conclusions as to the physiologic effects of gastro-jejunostomy

1 A certain amount of bile and pancreatic juice enter the stomach after gastro-jejunostomy, but the amount is small and has no injurious effect

2 The acidity of the gastric contents is markedly diminished, usually about 30 or 35 per cent This is due partly to a diminution of the total chlorids secreted, and partly to the partial or complete neutralization of the free hydrochloric acid by the alkaline bile and pancreatic juice and probably also to earlier stimulation of the pancreatic secretion, and compensatory earlier fall of the gastric secretion In gastric ulcer cases the removal of spasmodic stenosis of the pylorus likewise tends to diminish the total acidity

3 Gastric digestion is impaired but not lost after gastro-jejunostomy

4 The motility of the stomach, if normal before operation is for practical purposes unaffected Gastro-jejunostomy is, therefore, not a drainage operation Its beneficial effects on gastric ulcer are due to the diminution of the acidity of the gastric contents

5 Gastro-jejunostomy has no material effect on the metabolism of the human body, the percentage of nitrogen and fat absorbed being within the limits observed in individuals who are apparently healthy This chemicopathologic evidence is supported by evidence of clinical experience

In conclusion it is my pleasant duty to thank you one and all most cordially for the honor you have done me in inviting me to address this meeting of your association Conscious as I am of the fragmentary nature of my remarks, I would remind you that just as "Nature exists in leasts," so the science of medicine has been built up by the accumulation of little facts I venture to think that the dry bones of the observations which I have put before you are in reality clothed with the interest of practical importance in the surgery of the stomach

Be that as it may, this at least I hope, that such visits as mine serve as an evidence of that good fellowship which should, and I believe does, exist between members of our profession in the old world and in the new Although separated by the sea, we are united in the brotherhood of our common art May we each glory in the share the other takes in its advancement Let us say, as Marcus Aurelius said of old, "What matter by whom the good is done"?

And here may I pay a tribute to those in your country, some of whom now no longer speak to us who have played so great a part in the progress of gastric and intestinal surgery To mention only a few of these, the work of Halsted and Cushing on intestinal suturing the work of Murphy on intestinal anastomosis, and the brilliant results of the Mayos Ochsner, Finney, Deaver and others, are landmarks in the history of the surgery of the stomach And let us not forget the early work of Senn, the father of intestinal surgery and of O'Connor, whose conception and intrepid execution of the first total gastrectomy gave a powerful stimulus to gastric surgery All honor to those early pioneers Let us strive to follow in their footsteps

> "Science moves but slowly, slowly, creeping on from point to point,
> Men, my brothers, men the workers, forward, forward let us range"

The science and art of surgery is incomplete and incompletable We are aiming for a goal which we may never reach, but as your great writer, Emerson, says

> "The persuasion that we must search that which we do not know, will render us beyond comparison, better braver, and more industrious, than if we *thought* it impossible to discover that we do not know, and useless to search for it"

DISCUSSION

Dr. John J Gilbride, Philadelphia, has been interested in the question of metabolism following the operation of gastroenterostomy for several years Most surgeons, he said, have been of the opinion that the operation of gastroenterostomy is purely a mechanical one and not a physiologic procedure, but Dr Paterson's investigations show that the operation has a physiologic basis, and that the amount of nitrogen and fats absorbed are not decreased but actually increased Most other observers have shown that bile is constantly present in the stomach following gastroenterostomy At first the amount of bile present is rather large, later it becomes less, and finally, after several months, it is present only during the process of digestion In reference to the lowered secretion of the gastric juice, Dr Gilbride said that Mintz was the first to point out that following gastroenterostomy there is a reduction in the amount of gastric juice, and in some instances the chemical constituents of the secretion are so reduced as to render that secretion little more than water Dr

Paterson showed that there is a reduction of the chlorids in the gastric secretion, but the amount is not sufficient to materially disturb digestion. So far as the beneficial effects of the gastroenterostomy on the ulcer are concerned Dr. Gilbride believes that there is an increase in the rapidity with which the stomach empties itself, together with a lessening of the irritating effect of the gastric contents passing over the surface of the ulcer, and that there is also a reduction in the total acidity of the gastric contents. As to the effect of the short circuiting of the gastric contents on the secretions of the duodenum and pancreas, Dr. Gilbride mentioned that Pawlow is of the opinion that it is necessary to have the acid gastric contents pass over the surface of the duodenum in order to excite this secretion. However, Wertheimer and others have shown that this is not necessary, as was pointed out by Dr. Paterson, that when the gastric contents escape directly from the stomach into the jejunum there is an excitation of the secretions into the duodenum.

Dr. Walter B. Cannon, Cambridge, Mass., did not consider gastroenterostomy a drainage operation. In the stomach there are peristaltic waves going toward the pylorus. There results from these waves increased pressure on the food as the pylorus is approached. If there are two openings for the food to go through, the pyloric opening and the stoma, the food will go out through the pylorus rather than through the stoma. Another result of these waves, he said, is that the peristalsis, as it mixes the food, mixes it in the pyloric end rather than in the cardiac end of the stomach. The food comes out through the pylorus as a thin fluid. It does not go out through the stoma because of the thicker consistence the food has in regions somewhat remote from the pyloric opening. The observations which Dr. Blake and Dr. Cannon made were made with the Roentgen ray, and there has been some question whether the pictures seen were true pictures. However, their results have been recently confirmed by observations made in the College of Physicians and Surgeons of New York City. A string was fed to dogs with a small bag of shot tied to the end of the string. In almost all of the cases it was found that the string passed out through the pylorus and thus into the small intestine. Many other observations were also made. The stomach was connected with the lower ileum and also with the colon, and the animal, for a time, gained in weight, which could not be possible if the food did not go out through the pylorus. Dr. Cannon thinks we are justified in concluding, therefore, that when there is a double way, the natural and artificial, the natural passage will be taken and not the artificial. Dr. Paterson, he said, mentioned one case in which they had a large opening, and stated that the food went out both ways. That was true only when fluid food was given, in this case semisolid food went out only through the pyloric opening and through the stoma.

Dr. J. W. Draper Maury, New York, thought that it might be interesting to direct attention to the experiments just referred to by Dr. Cannon. At the Surgical Research Laboratory they took a dog on which a gastrojejunostomy had been done. The animal was fed with a piece of meat with a small bag of shot tied to it. After several days the animal was opened and the course taken by the string, which had been tied to the pterygomaxillary ligament, was studied. A number of such experiments were carried out, and in but a single instance had the bag of shot passed out through the stoma. In every other case it passed out through the pylorus. In the one exception the string passed down through the stoma, but instead of going on it came toward the pylorus, entered the stomach again, again passed out through the stoma and back into the stomach through the pylorus, completing two cycles. A second series of experiments was made to show whether the food passed through the pylorus or not. A very low gastroileostomy was done. Animals so operated on invariably gained in weight for a short time, about a week, then lost weight very rapidly and died, probably not because of the fact that the stomach was not functionating, but for other reasons. Another series of experiments was done with a piece of string. A gastroenterostomy was done at about the middle of the ileum and allowed to heal thoroughly. Then a piece of string was fed and attached to it a piece of meat of undigestible type. The free end of the string was tied to the pterygomaxillary ligament and left long enough to come half way down between the pylorus and stomach. A few days later the animal was fed fat. An hour afterward the animal was opened, and the lacteals on the oral side of the meat were gorged, those distal to it, between the meat and the stoma, were empty. The conclusion is either that no fat goes through the stoma, or it may be that no pancreatic juice was able to pass the temporary obstruction.

Dr. Herbert J. Paterson, London, England, thought that experiments on animals are open to criticism. He said that we are scarcely justified in assuming that the conclusions drawn from observations on animals hold good for human beings. The experiments in which animals were fed on bags of shot are undoubtedly of great interest, but at the same time the interest is an academic one, for he, for one, is not in the habit of feeding his patients on such indigestible food. It does not interest him as a surgeon whether bags of shot pass out through the pylorus or through the anastomotic opening. Such experiments interest us as scientists, not as surgeons. The practical point which Dr. Paterson endeavored to bring out is this: that whether the food passes out of the stomach through the pylorus or through the artificial stoma—whether the pylorus is patent or not—the existence of a short circuit between the stomach and jejunum has for practical purposes no effect on the metabolism of the human body, while we do know that it has a very beneficial effect on gastric ulcer. Therefore, he submits that when the operation of gastrojejunostomy is deemed advisable clinically, one need not, on physiologic grounds, hesitate to perform it.

ANATOMY OF THE PALATE, NORMAL AND CLEFT.*

TRUMAN W. BROPHY, M.D.

CHICAGO.

It is not my purpose to describe in detail the anatomy of the palate, normal and cleft, but to point out the deviations from the normal as observed in the cleft. In the human embryo of about the third week, the face is in progress of development. From the front of the cephalic mass five tubercles bud out, of which the middle one passes vertically downward. This tubercle is double, and in it the intermaxillary bones are developed which contain the incisor teeth. Therefore, it bears the name "incisive tubercle."

The rudimentary superior maxillary bones, which are widely separated, are developed at each side of the incisive tubercle, though not united with it. While the fourth and fifth tubercles are separated in front, they subsequently unite in the median line to form the mandible.

Simultaneously the palate begins to be formed by the approach toward the median line of the two horizontal plates, developing from the maxillary processes on either side. If the palatal processes of the superior maxilla unite in the median line and blend also with the incisive bones, and the vomer grows downward to meet the palatal processes in their line of union, the upper jaw and lip will be normal. If, however, the superior maxillary and intermaxillary processes fail to unite with each other, cleft palate and harelip in one of their many forms will result. In the presentation of this subject, I desire to point out the cause of the deformity in question and a method of practice tested by the lapse of many years, by which the defect may be overcome at a time in life when it can be most easily and successfully accomplished.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

WHAT IS THE CAUSE OF CLEFT PALATE?

The literature on this subject is voluminous and largely theoretical In reviewing this literature we find a great similarity of views expressed by various authors Heredity, prenatal impressions and imperfect nutrition during the early months of gestation are assigned as causes

The condition of the mouth of a child who *has a congenital* cleft palate is described thus "Want of coaptation, resulting from defective formation in the palatine plates of the maxillary and palate bones, is the cause of congenital deficiencies of the parts in question" Again "The palate plates are arrested in their growth and permanent fissure of the palate is the result The principal effects resulting from an absence of a portion of the palatine organs are an impairment of the functions of mastication, deglutition and speech" The definition generally given for cleft palate is "A congenital deformity characterized by a fissure or fissures of the palate, due to arrested development"

From the foregoing quotations, we find that the opinions expressed are, that congenital cleft palate is the result of *incomplete* development of the tissue necessary to enter into its complete formation

The opinions of authors thus expressed have been based, no doubt, on their observations *of the open space* between the oral and nasal cavities

The deformity is not the result of "defective formation in the palatine plates," nor "congenital deficiencies of the parts in question," nor "arrested growth of the palate," nor "absence of a portion of the palatine tissue" All children who have congenital cleft palate, with rare exceptions, have in the palate the normal amount of tissue, although it is not united in the median line, it is cleft

Congenital cleft palate has a predisposing and an exciting cause The predisposing cause is heredity The *exciting cause* is mechanical, the application of force in embryo I have little faith in the theory that prenatal impressions cause failure of union of the bones in question In the greater number of cases in which this cause has been given, on inquiring, it has been found that the mental shock occurred subsequent to the time when, if physiologic processes were not interfered with, union of the bones would be complete It is too apparent to require argument that a mental impression could not separate a suture Prenatal impressions, possibly, may be a factor in causing failure of union, but we have no authentic evidence to that effect

I believe, however, that defective nutrition, or general debility of the mother during the early months of gestation from any cause, *may delay* union of the palatal plates Nature does not fail to develop the necessary bone and soft parts *to form a normal* palate But it does fail to bring the parts into apposition and unite them

The bones having failed to unite prior to the fifth *month* of intrauterine life, *the mandible*, as soon as the muscles of mastication become active, brings pressure on the palatoalveolar inclined planes of the ununited superior maxillary bones, and, acting as a wedge, forces them apart and widens the breach Moreover, the pressure of the *tongue* and the flexed position of the head with the symphysis of the mandible resting on the sternum may contribute to some extent to the force which is exerted by the lower jaw on the palatal arch and which forces the bones apart

Having operated on over 1,300 cleft palate patients, over 400 of whom were infants under 6 *months old*, I have found that the breadth of the upper jaw, as compared with the lower, is just as much broader than it should be as *the distance* between the borders of the fissure When we bring the borders of the fissure into contact, we have brought the upper jaw back to its normal breadth and to its proper relation with the lower jaw There are very few exceptions to this statement

In young infants who have cleft palate, I have always found that by slightly forcing the chin upward the pressure of *the* lower jaw against the segments of the upper jaw will spring the cleft bones apart

Writers who have given a great deal of thought to the subject and who have dwelt at great length on its etiology, those who have proposed the more *generous* use of phosphatic food for the mother during the period of gestation have been unconscious of the fact that the bones are not as a rule, defective in structure nor incomplete in development There is failure of union

SUMMARY

The causes of congenital cleft palate are

1 Heredity

2 Mechanical force exerted by lower jaw against the upper jaw in embryo

In congenital cleft palate in young infants, the full amount of tissue is developed to form a normal palate, the defect is due to failure of union General debility of the mother in early months of gestation may be a factor Prenatal impressions possibly, but evidence not conclusive

Treatment—Close the separated bones within three months after birth when the bones are soft and easily bent and moved into correct position The hard palate should be *closed before the lip operation* The *lip* operation should follow within three *months after the* bones have been united The soft palate to be operated on last, preferably when the patient is about 14 to 16 months old

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WHAT SHOULD BE THE ATTITUDE OF THE PROFESSION TOWARD THE HYGIENE OF SCHOOL LIFE?*

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In a recent number of the *Medical Record* the statement is made that "a conference of the masters and medical officers of the great schools of England is to be called to consider the subject of the hours of sleep necessary for the scholars a course fully justified by the importance of the question"

We read in the public prints that the second International Congress on School Hygiene is to be held in London next August under the patronage of the King and the presidency of that eminent physician and philanthropist, Sir Lauder Brunton I quote from the prospectus

> The marked success of the First International Congress in School Hygiene, held in Nuremberg in 1904, in bringing together workers of all countries, and in giving an impetus to this work, has already been signalized by increased literary activity in nearly every country One of the happiest results of the Nuremberg Congress was that members of various professions, teachers, medical men, architects, engineers, administrators, officials and manufacturers, appreciated

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City June, 1907

> how intimately their work and duties were correlated, and also learned how greatly each was indebted to the other
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> One of the aims of the congress was to coordinate the efforts of these various workers, and to aid each separate investigator

Here are gratifying evidences that in England a great advance has been made since Herbert Spencer recorded his disgust that the English landed gentry would spend hours of their time daily discussing the best methods of breeding cattle, but avoided the consideration of the education of their own children as something quite beneath their notice

But how about America? Has anyone ever heard of a conference between medical men, architects engineers and public officials in regard to school hygiene? Have the masters and medical officers of the great schools in the United States ever met to confer on the number of hours that school children should sleep? Might it not possibly seem slightly *infra dignitatem* for some of our highly-cultivated LLD's and S T D's to meet some of our professors of the science and practice of medicine to talk over the hours of sleep most suitable for a school child? And yet any reasonable person will acknowledge that, so far as the welfare of the child is concerned, the regulation of its habits of life is far more important than a consideration of the force of the digamma or the elucidation of Babylonic inscriptions In fact, I will go further than this and assert, without fear of successful contradiction, that the value of health and happiness is so much greater than the value of mere erudition that an investigation of the proper hours of sleep is of vastly more importance than any learned discussions whatever

Our present ill-advised system of public instruction is constantly defeating its own ends and turning out invalids, cranks and "bookful blockheads ignorantly read," simply for the want of a well-balanced curriculum of instruction, according an appropriate place to physical education

I am aware that a society for the promotion of school hygiene exists in this country, but I have not been able to learn the particulars of its scope or organization There are also various committees, like the Committee on Physical Welfare of School Children of New York City, which are doing excellent work along these lines, but there is a lamentable want of correlation between the efforts of such bodies of workers and the boards of education Unfortunately the medical profession in the United States seems inclined to keep strictly aloof from questions of school policy The health of school children has been studied a great deal and much valuable matter has been collected and published, but this has yet to be systematized and made available for general use in the school room in the every-day life of the scholar

It is by information, not argument, that the public is convinced, and we are now in the stage of collecting a vast quantity of information in relation to school children which bids fair to be of great use later on

It is abundantly true that the science of hygiene has outrun its practical application in every direction, and in none more markedly than in the hygiene of school life Splendid work has been done in Chicago, Boston Brookline, Mass, and other places in this country, as well as in various foreign countries, notably in Germany, and that the need is there felt of amalgamating and systematizing the work of different agencies is shown by the call for the International Congress from which I have already quoted

A striking evidence of the utter want of harmony between those interested in school hygiene in New York City was furnished at a conference between the commissioner of health the superintendent of schools and the committee on the physical welfare of school children, recently held in the Academy of Medicine The last named body was especially anxious to secure funds for the prosecution of their most valuable and interesting work from the board of estimate and apportionment I paraphrase an extract from the report of the meeting which appeared in the New York *Sun*

> Had everyone present agreed that these things ought to be done, the discussion on both the theoretical and practical sides of the issues involved would have been complex enough When, however, it developed soon after the opening of the evening session that the representative of the board of education did not in the least agree with the health commissioner on questions of policy and detail, and that neither of them was prepared to endorse the sentiments of the chairman of the conference, everything became so tangled that the audience simply gave up trying to understand the knotty points, and contented themselves with applauding the dramatic efforts of the speakers

A number of teachers were present and tried to help unravel the difficulties of the situation Some of the ideas expressed were, however, impracticable, and some were too indefinite to be of value Such a conference, however, is a step in the right direction The problems of school hygiene will not be solved in a moment Many of them are still unsolved after years of study

A school superintendent in a nearby city wrote to me once that in his opinion a medical director should be connected with every school, who should have the power to close the school, shorten the hours of study or take any other steps which he might deem necessary for the health and well-being of the scholars Nor does this gentleman stand alone in saying to the medical profession, "Come over into Macedonia and help us"

The medical inspection of schools, now so generally adopted, has received, so far as I have been able to learn, the unqualified approbation of the teachers, who desire its extension and perfection

These are said to be the times of great unrest and nothing has felt the impulse of change and innovation more than the so-called systems of education As physicians, however, we are not concerned in the ultimate fate of the humanities or the triumph of the utilitarian branches of study We are, or we should be, interested in the place which physical education shall hold in the instruction of children, and we must do our share in the solution of this difficult problem Parents and teachers alike are looking to us for help In one case at least, that has recently been reported, legal aid was called in to prevent overstudy in the high schools in Brooklyn A presentment was handed up by the Grand Jury of Kings County, New York, after their examination of several members of the board of education and the principals of the high schools, containing a recommendation that home study by the high school pupils should entirely cease, as the jury had reached the conclusion that these scholars were being forced far beyond their capacity to absorb and retain knowledge This is the only instance that ever came to my knowledge in which legal aid has been invoked to limit the number of hours which pupils in the public schools shall devote to study

It would be interesting to know the qualifications of the particular grand jury which took such a decided stand in regard to home study, because they have handled without gloves a question in regard to which they possibly were not competent to express an opinion The instance is referred to here chiefly as it illustrates the dissatisfaction with public school methods which seems to be exceedingly common at the present writing, and which is no doubt largely due to the uncertainties and contradictions which appear in so much of the present writing and talking on the subject of education

It is unquestionably true in educational matters, as in many others, that "unwarranted conclusions are being drawn and hasty proposals made in the matter of legislation because of the lack of a broad basis of evidence and careful statistics" Such instances, however, as the action of the Kings County Grand Jury serve to emphasize the greatly increased popular interest in questions of education, as well as in those of health

As was recently pointed out, the leading popular magazines a short time ago would uniformly decline to publish papers on health and hygiene which to-day they are glad to publish and are willing to pay $100 apiece for This is solely because the public demands instruction in hygiene, and the magazine editors must provide it or the sales of their publications will fall off The public is particularly anxious to learn something authoritative in regard to the hygiene of school life and the care and rearing of children This demand comes not alone from those eager for sensational literature, but from our most earnest and philanthropic citizens It is generally agreed that something is wrong, and the agitation will go on until the faults are discovered and eradicated

It has been asserted in popular literature that several thousand children in New York City go to school every morning without their breakfasts This statement naturally claimed considerable attention and led, I believe, to the inauguration of a movement to provide breakfasts for these children at the expense of the city An investigation by the board of health, however, disclosed the fact that the children really did go to school breakfastless, not because no food was provided, but because they could not eat after the night spent in their ill-ventilated and overcrowded tenements The Committee on the Physical Welfare of School Children also found that only 1 1 per cent. of 1 500 children investigated were not provided with some breakfast

While no doubt sensational writing on this subject has served a good purpose, it is scarcely sufficiently broad in its scope or moderate in its statements to aid materially in the scientific solution of the social problems of the day As has been well said, "The sentimentalist is of excellent service, provided that he or she be not permitted to make the laws before the physician, the statistician and political economist have had time to give reason and justice to the measure of relief proposed" According to Professor Gomperz, "The physician can never be absent from his post in the campaign against the encroachment of fancy on the domain of reason"

There has been much dispute, as you are aware, as to the age at which school life should begin, as well as to the number of hours which should be spent in school each day Just now we are told by some that a school recess is unnecessary because certain rhythmical movements called gymnastics, in which the pupils are made to indulge, may profitably take the place of the unorganized and crude motions in which the children naturally indulge in their play Such reasoning shows the same breadth of mind and grasp of the important play-problem in education as has been evinced by those who would forbid a little child the delight of "Mother Goose's Melodies" because of their inherent improbability

Some observer has laid down the dictum that he has never met with a case of chronic bad spelling in which there was not some defect of vision This at first sounds convincing until we reflect that the normal eye is much more infrequent than that, now partly extinct, variety of public school scholar, the good speller Here then is another place in which the services of the well-trained and broad-minded physician are needed No doubt the perfunctory examinations of the eyes and ears of the scholars perpetrated, for the most part, by the already overworked teachers are better than no examinations, yet they are entirely inadequate to detect any but the grossest lesions and they have been so imperfectly applied that many pupils have been sent to oculists and aurists for treatment of which they stood in no need

In the matter of teeth also experts should be employed for inspectors, as recommended by Dr Osler, who has said, in effect, that he considers the question of sound teeth of greater national importance than that of the restriction of the consumption of alcohol

A "hospital" school was started in Chicago to furnish proper instruction for slightly subnormal and invalid children to provide laboratory facilities for the scientific investigation of the phenomena connected with their conditions, as well as to afford special training for the teachers and nurses for this class of pupils It is reported that 60 per cent of the children who have received instruction and medical care in this institution are now working with normal children in the regular schools Truly a gratifying result, showing again the great and beneficent truth that Nature is wondrous kind and that if one will study her laws and give her the aid she requires at the time that it is required great and unexpected good can be wrought out for the unfortunate and backward child

The old procrustean method of education dubbed the unfortunate waif a dunce, and then proceeded to shut out all hope by condemning him to tasks which he could not master and rendering his mental confusion and darkness worse, if not irreparable, by punishment and derision until he was driven out into the streets, if a poor man's son, to become a vagrant and a law-breaker, and if the offspring of wealthy parents to pass a scarcely more profitable existence, possibly in a sanatorium or under the care of a keeper

That some more efficient supervision must be exercised over the school sports, which should be recognized as a part of the education and in which all the pupils and teachers should participate, the following goes to show Murphy, the well-known trainer of college football teams, said some time ago that boys under 16 years ought not to be allowed to play hard football games I quote his words

> The greatest evil in trying to develop university football players is that so many otherwise promising players are strained by hard playing before they are sufficiently developed in growth or strength to stand the great strain of football in other than purely friendly or boyish games under some sort of watchful and intelligent direction by their elders

With this sentiment I am disposed to agree fully, after having watched with some care the training and development of a high school football team during the past year Here seems to be a menace to the best interests of the most promising of our school boys quite analogous to the injury which too early attendance at kindergarten and school inflicts on the public school scholars generally, and here is another of the places where the medical profession must interfere.

That interscholastic and even freshmen football contests should be abolished or modified I am strongly inclined to believe, yet there is no movement on foot to do this any more than there is to prevent too young children from the mental strain of too early attendance at school, in consequence of which they are listless, pale, sleepless and introspective at 10 or 12 years of age.

These are questions of the utmost importance. How shall they be met?

I believe that to provide the proper sort of physical instruction a special class of physicians will have to be raised up. Men of special fitness, themselves athletes or practical gymnasts, adepts in physiology and personal hygiene, who have had wide clinical experience with ordinary cases of sickness, and who are beside expert dietitians and have themselves enjoyed a university and a hospital training. Such are the physicians who should become the professors of physical training in our high schools and colleges.[1]

But let us never lose sight of the fact that the most important years of a child's education, both physical and mental, are the earliest years, and that, as pointed out by German educators years ago, a glaring fault of educational methods in the United States is that we put our youngest and most inexperienced teachers to do the most important work, namely, the instruction of the youngest children, so the most important work that the physical educator would have to do would be the teaching of the youngest children and the protection of their delicate bodies and pliant minds from the injuries now too often inflicted on them in their school life.

Besides these highly trained physical instructors, all the teachers will have to know more of the body and its functions. Physical education must be so taught in all the normal schools that the teachers shall become experts in the physical condition of children. Certainly they can soon learn by observation to determine whether any particular child feels well or badly, and if he is falling behind in his studies as well as in his weight and bodily fitness, whether this is due to ill health, neglect, bad surroundings or bad habits. Hoffmann has said: "It is probable that our public schools are as great producers of ill health as the mills."

In conversation with a superintendent of schools once I was informed that since a ventilating system had been put into an unhygienic old schoolhouse the town had saved the cost of the improvement in a short time in the salaries which they would otherwise have been obliged to pay the extra teachers to take the places of those made sick by the foul air of the building. He added that the ventilation of the building was still far from satisfactory.

This leads one to observe in passing that, in some schools at least, our present overloaded system of public school instruction is unspeakably cruel and exacting on the teachers. But we rarely give them a thought, and they seem to be too long suffering to complain. The physical director would relieve them of a part of their burden by assuming charge of the child's physical education and bodily welfare.

Thorough and painstaking examinations of the whole body and of each particular function of every pupil should be regularly made, and a complete chart should be filled out and compared with the admirable tables drawn up by Dr. Christopher and others after the careful weighing and measuring of many school children. I believe that such charts are now filled out and kept in some schools, not probably very exhaustively done and seldom, I suppose, sent to the parents.

The examinations of the physical condition and bodily development should occur just as regularly as those for mental prowess, marks should be given and should always be considered before the child is promoted. A child physically unfit to go into a higher grade should be dealt with as the case may demand. It might be either kept in the same grade, kept out of school for a longer or shorter time, or allowed to take only a part of the studies in the new grade. These points should be determined after a careful consultation between the physical director and the teachers of the other branches.

It is simply impossible to conceive of the number of broken hearts among the parents and of wrecked lives among the children that would be prevented by the simple rule of only promoting those children who are physically fit. If we add to this refusing a teachers' certificate to any one unable to pass a strict physical examination and the requirement that the teachers shall mingle in the children's games, we shall have made a long step toward the physical millennium toward which we believe the world is advancing.

As to the proper regulation of this physical instruction, and the providing of good men and women to do the work—much of the examination and instruction of the girls would have to be done by women, who are, if anything, better adapted than men for the work—the correct inspection of school houses and playgrounds and, in fact, the entire question of physical education, should be under a special board in each state, as suggested a few years ago by Dr. Cook, then Chairman of the Section on Diseases of Children of the American Medical Association. A board of five members, two at least of whom should be physicians, specially qualified for the work, should be appointed by the judges of the supreme court of the state. Let them receive adequate remuneration for the proper performance of their duties. This commission should have control over all the questions that we have hinted at, should appoint the physical instructors and supervise the inspection of the scholars and of the school houses and should have the power to shut up any school in the state in which the laws not alone of the state or of the United States, but of health and hygiene, are being violated.

The duty of our profession in the premises is to see that properly qualified men are put in office, that adequate legislation is enacted, and that this movement shall receive the proper support. So far from antagonizing the people by such a movement, we shall win their hearty cooperation. As hinted before, the medical profession have heretofore rather assumed the position of hanging back, and, according to the movement of securing a sound physical education for all our youth, faint praise or half-hearted acquiescence.

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[1] Since this paper was writtten I have read with interest Dr. Nicholas Senn's Jerome Cochran Lecture, delivered before the Medical Association of the State of Alabama (The Journal A. M. A., June 1, 1907), in which he advocates the *foundation of hygienic institutes*, where young physicians can receive the necessary education and training to prepare *themselves for* the high and responsible office of sanitary or health commissioner in the different communities. A somewhat larger scope must be given to such an institution before it can turn out the properly qualified medical director and physical instructor in the public and private schools. Yet there is no doubt that there is the same crying need for the latter as *for* the *former class of* experts, and that the same or similar facilities should be provided for their training and education.

But I assure you, my brethren, that the movement is now so strong that no power on earth can stop it, and that, unless we fit ourselves by study and experience to take our part in it, we shall not only fail in our duty to our day and generation, but the places that we should hold will be snatched from us by a body of physical educators raised to meet the growing demand, and we shall lose both in prestige and influence by their usurpation

We must be up and doing The proposition to appoint by law in each state a commission to take charge of the physical instruction in every public school and also, if need be, to look after the proper execution of the child labor laws, appointed by the judges of the supreme court of the state, in order to avoid, as far as possible the cankering touch of politics, is a good one, and should receive our untiring and united support

This matter should be brought up in each state society and advocated by as many of the state journals as can be enlisted in the work I repeat that its importance can not be over estimated There is a hiatus in the scheme of the physical education of children which only the expert and especially trained physician can fill, and the profession must see that such experts are provided that they shall receive the recognition and exercise the authority which the great responsibility they will have assumed entitles them to The problem of the proper education of our children can not be solved without just such expert skill, and these experts can not it seems to me, exercise the proper authority and wield sufficient influence unless the enlightened and instructed medical profession shall stand solidly behind them

Our duty is very plain Let us at least not lag behind our English colleagues in doing our part in this great forward movement

DISCUSSION

Dr. Mary McCay Wenck, Sunbury, Pa, said that educating only school and college graduates as to the inevitable evil results of disease following wrongdoing does not reach the masses of young people In Sunbury there is an immense silk mill employing about six hundred girls, many of whom are innocent country girls, entirely ignorant of the existence of vice Some way should be found to educate them on this most important subject Dr Wenck asked When patients present themselves with venereal troubles must the physician give to the unsuspecting wife an unvarnished statement regarding her condition? Is it the physician's duty to call a spade a spade to her? If it is a duty, Dr Wenck fears that the divorce courts will be overflowing

Dr. S A Knopf, New York City, said that there is not only a physical hygiene, but a mental and a moral hygiene which must be considered In New York an effort has been made to improve the morals of children by removing adenoids—by attending to physical defects In the truant school it was found that when adenoids, eyes and teeth were attended to there were fewer truants and the children became well behaved, and by and by they could be sent back to the other school There is just as much physical as mental hygiene. There is a large population in all cities in which the child is underfed, and, while Dr Knopf does not believe in pauperizing, he believes, he said, that when a child is going to school in the morning, with little or no breakfast and having for a lunch an apple and a cracker, that child can not do good work In Berlin it was found that if the municipality appropriated a certain amount of money and gave such children a meat sandwich and one or two glasses of milk at noon they did better work, improved in weight and were better behaved Many thousands of school children in New York are myopic, astigmatic or have other defects of vision, and the result is that they can not see the blackboard, they are defective and are put back without any fault of their own. An effort is being made to have glasses provided The children are sent to special clinics for diseases of the eyes and glasses are prescribed The children are then sent back to the family physician, and if he does not attend to the matter they are sent to the dispensary Now it transpires that there is not enough money to buy the glasses, so many are needed

Dr Knopf referred to the value of visiting school nurses and referred especially to a certain parasitic movement of the head which is frequent among the poor of New York In former years a child so affected was simply sent home because it had a contagious disease Finally, Dr Biggs and Dr Darlington, of the health department, created a corps of nurses, whose sole duty it was to clean the heads of the little ones They attended to them, sent them home, and these children, instead of losing eighty days of school life, lost one or two days That shows the value of attending to little ones while they go to school

Dr. G W Drake, Hollins, Va, said that not only is it necessary to look after the prevention of bacterial diseases, but to look also to the prevention of what he calls self-produced diseases—diseases resulting from unhygienic habits of various kinds Sufficient attention has been paid to ventilation, heating, lighting, but more than that is necessary the curriculum of the schools needs to be looked after The study hours, the sleeping hours, the resting hours—all these need to be looked after, and especially do physicians need to give advice as to the examinations The examinations in some schools are ruinous, are destructive to health, destructive to life, and the trouble with our teachers is that they are not themselves educated in the true sense of the word Education means a proper development or leading out of every organ of the body in symmetrical proportion, not the development of one to the detriment of another That needs to be looked after Dr Drake has tried to impress on teachers the fact that what we call mental education is not all that they have to look after—that they must also look after the education of every part of the body the education of the liver, the lungs, the muscles and of every department of the brain The brain is not one organ, the motor areas of the brain, the sensory, and all the areas of the brain must be educated to fit them for their function, and the trouble, he says, is that presidents of colleges and principals of schools and educators generally are not acquainted with physiology and hygiene Dr Drake has said that no man should go out from a theological seminary to preach the gospel who had not first obtained a diploma in physiology and hygiene. It ought to be compulsory Every one has been taught physiology in the primary department, and yet in the higher departments it is not studied. It should be taught as thoroughly in schools and colleges as in our medical colleges—in fact, even better It should be taught more practically, and every physician, Dr Drake declared, should possess a diploma in physiology and hygiene Whenever that stage is reached, we will have proper education of our children and we will have healthy children. Educated men have undergone such a strain of examination and hard study that on leaving school with their diplomas they are not qualified to do the work for which they were educated Students should be taught when to eat, how to eat, what to eat, when to sleep, how long to sleep, when to study and how long to study Dr Drake said that he heard a principal of a school say that the greatest enemies that higher education has are the doctors, and he thought it a compliment to the doctors

Dr. Paul Paquin, Asheville, N C, said that in North Carolina there is a state law making the school system neutral as to politics In Asheville, under that principle, there is no friction whatever, and it has been possible to establish a system of medical supervision of all the schools There are black and white schools there the colored schools under colored physicians, the white schools under white physicians On the Asheville School Board there is a physician as trustee, and, besides that, inspectors for every school. The teachers are all taught to take temperatures—to examine children as they come in and to call a physician when there is the least indication of illness For any illness the child is sent home to the family physician, if not attended to there, he may be attended to by the inspectors The question of time of study and study at home is also considered Besides this, an oculist makes it his duty to look after every child's eyes In North Carolina the work of medical supervision advocated here has been in operation for the last three years, and it is working almost perfectly This year there has not been a case of typhoid fever, diphtheria or other infectious disease in the schools People are becoming educated to the needs of sanitary individual health regulation in schools In Asheville, schools are being built on modern lines, adapted to the needs of the times and within the principles of sanitation advocated in the Section And all that is done under the supervision of three physicians and a sanitary engineer

Dr Liston H Montgomery, Chicago, said that in Chicago there is a board of education, composed of supposed non politicians, women, ministers and lawyers, as well as politicians, with occasionally a physician, but it is supposed to be a non political body According to the law, each child shall attend school up to the age of 14 years, beginning at 5 or 6 years and attending, perhaps, the kindergarten first, and he is not supposed to be employed by any firm until the age of 14 has been reached, whether the child be a girl or a boy

Dr Richard Cole Newton, Montclair, N J, said that a great deal is being done in all directions in the matter of the physical care of school children, but the medical profession as a body has not shown that absorbing interest in the question that they ought to show and which he thinks they will have to show We must have medical experts in education Such questions must be solved as to how much physical exercise is to be allowed, at what age it should begin, and what the dangers are, if any, that may complicate physical exercise in young children That will be an important part of the duty of the physical expert who shall have charge of this branch of education Without such experts many of these problems can not be solved Dr Newton said that he knows what Dr Knopf said about the immense interest taken in the public schools by all sorts of societies to be true, but before the problems come to a final solution they must be studied carefully by a special body of experts When such a body shall have been established an enormous advance in civilization will have been made

THE STATE CONTROL OF INLAND WATERS*

H M BRACKEN, M D

Secretary and Executive Officer Minnesota State Board of Health

MINNEAPOLIS

The desirability of state control over inland waters, I am sure, will be recognized by every careful thinker as an absolute necessity Of course there are some selfish individuals who wish to use a waterway for their own convenience, urging that streams are Nature's sewers But even these individuals run to cover when their personal comfort is jeopardized by their neighbors following out this line of argument

For many years England permitted the pollution of streams, but a time came when such conditions were beyond endurance It then cost millions of pounds to remedy the evil The older states in our own country tolerated stream pollution until conditions became unbearable, and then, following in the steps of England, undertook to remedy an evil which never should have been permitted to exist The newer states seem to be following in the footsteps of the older countries so far as these evils are concerned In my state, Minnesota it is by no means uncommon to hear people argue that the proper place for sewage is in streams, and this argument is too often advanced by medical men who should know better There are lawmakers even in Minnesota, and I presume in other states who, considering their own selfish interests and the selfish interests of their constituents, use their legislative authority to prevent the passage of laws looking to the protection of streams, lakes, etc, from pollution These selfish individuals represent a class of people who are interested in the present rather than the future, who care nothing for posterity, who will not stop to consider that a dollar well spent now may save an expenditure of hundreds of dollars later Unfortunately the world at large is governed by selfishness, and legislators are often no exception to this rule

If there is no state control of inland waters we have as a result a general pollution of such waters as the population of a district increases Such pollution may result from the discharge of domestic sewage or of industrial waste, and may become a nuisance or a cause of disease It is a remarkable fact that a cause of disease among human beings will be tolerated much longer than a nuisance which is offensive or a cause of disease among animals which results in a direct financial loss to their owners This is demonstrable, for all of us realize that a known infected public water supply may be continued in use indefinitely by a municipality or company On the other hand, an intolerable stench, which in no sense need be injurious to health, calls forth protests that will result in its suppression regardless of cost The farmer who thinks that his cattle are suffering as the result of drinking impure water will, by injunction, promptly restrain the offending parties from further endangering the lives of his stock

It would seem that the short-sighted policy of the past in the older countries, in dealing with stream pollution would be so evident to all concerned as to call forth vigorous efforts on the part of interested parties to pursue a wiser course from this time on It is not a difficult problem to care for sewage properly Its discharge without purification into streams or other bodies of water is simply an evidence of shiftlessness

If there is to be state control of inland waters the question is at once raised as to whom should have charge of such matters Bearing on this point I wish to quote extensively from an editorial in the *Engineering News*, March 29, 1906, as follows

> The proposal for a joint metropolitan sewerage commission for New York and New Jersey, made by the New York Bay Pollution Commission, and the conference on the pollution of the Delaware river held by representatives of the states of New Jersey and Pennsylvania, resulting in a proposal for joint action by those two states and by New York to prevent the pollution of the Delaware, suggest a brief consideration of the governmental machinery already existing in the several states to deal with questions of water pollution
>
> New York now has a State Department of Health, a State Water Supply Commission (both of which are permanent), and for two years past there has been in existence the New York Bay Pollution Commission
>
> New Jersey has a State Board of Health, a State Sewerage Commission, and a Passaic Valley Sewerage Commission, each of which is a permanent body
>
> Pennsylvania has a State Department of Health and a State Water Supply Commission
>
> The question naturally arises whether this machinery is not more than adequate to deal with water pollution questions By saying "more than adequate" we mean to suggest that it might be far better to consolidate some of the existing commissions in the several states rather than to provide a new one, and after such consolidation was effected to refer all matters of interstate pollution to the single strong commission that might be hoped for in each state, thus securing such joint action as might be necessary
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> The proposal recently made by the New York Bay Pollution Commission does not presuppose the creation of any new body,

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City, June, 1907

of necessity; in New Jersey, but it does contemplate the continuation of a third commission in New York state Is this necessary or desirable? There may be local conditions in each of the states named requiring the three separate commissions in New York and New Jersey, and the two commissions in Pennsylvania, but on broad general grounds a reduction in number is certainly desirable

In Massachusetts nearly all the matters entrusted to the several commissions noted above have been most successfully handled by the State Board of Health We think that in the case of New York and New Jersey, at least, it would have been better to have strengthened the state health departments rather than to have created one, at least, of the additional commissions There were, however, some special reasons for the course pursued. In New Jersey there was some justification for establishing the Passaic Valley Sewerage Commission, on account of the fact that large construction work was necessary in the Passaic valley It might have been well, however, to have deferred the appointment of a commission for construction work until the problem of final disposal had been more thoroughly worked out. As matters stand, the New Jersey State Sewerage Commission have been costing the people of New Jersey some $20,000 a year or more, and thus far have accomplished comparatively little. A small part of this sum entrusted to a properly organized and equipped state board of health each year, it seems to us, might have yielded far better and more *permanent* results There was much to justify the creation of a separate commission for the study of the pollution of New York Bay, but in this case, also, assuming a properly organized and equipped state board of health, it is questionable whether the work might not better have been entrusted to the latter The state water supply commissions of both New York and Pennsylvania were created in large part to deal with matters not properly pertaining to health departments The New York commission adjusts conflicting interests between different communities seeking to draw water from the same drainage areas, and to it is also entrusted the matter of seeing that water and land interests are properly protected when a city reaches out into the rural districts for a supply Thus far the Pennsylvania commission has seemed to do little work except to pass on applications for charters The New York Water Supply Commission has mapped out a very ambitious program of investigation of both the water supplies and sewerage systems of the entire state To a large extent this program covers the very field that seems naturally to pertain to the State Board of Health.

The New York State Health Department, as shown by its last annual report, is very poorly equipped for its work, owing to limited appropriations This applies particularly to its investigations of water supply and sewerage questions It seems fair to ask whether the State Health Department of New York is not being starved to provide funds for the other commissions We do not suppose that this is actually the case, but the overlapping of work must make it difficult for the several commissions to secure the necessary appropriations Certain it is that in Massachusetts, where all the sanitary work naturally falling to the State Board of Health has been continuously entrusted to such a board, highly gratifying results have been secured. In several other states where the experiment of splitting up the work has been tried long enough to see how it works, the results have been, in many respects, disappointing

Connecticut, some will remember, launched a state sewerage commission a few years ago, but after doing some good work with a very limited appropriation it came to an untimely end If the small sum of *money* appropriated to it had been given to the State Board of Health, it seems very likely that the appropriation might have been continued to the present time, and perhaps increased slightly from year to year

About the same time that Connecticut split up its work of sanitary investigation, Ohio entrusted to its State Board of Health an investigation of the sanitary condition of the waters of the state. This work has increased from year to year, both in amount and efficiency, until Ohio is one of the leading states in the union in its supervision of public water supplies and sewage disposal. Only recently an appropriation of $15,000 has been made for an investigation by the State Board of Health on the actual workings of water and sewage purification plants within the state Here, as in Massachusetts, concentrating sanitary investigations in the State Board of Health has worked admirably

We are well aware that many troublesome questions are raised by the foregoing discussion, or would be if those who know the facts spoke frankly, but is it not high time that they were raised, and, if possible, settled? The questions center around the competence of certain state boards of health in the past, the degree of confidence with which their work and their personnel has inspired the public, the proper domain of a state board of health, and the persistent tendency of all governments to appoint new commissions and enact new laws instead of making the most of existing commissions and laws

It is not necessary, I am sure, to apologize for this extensive quotation, for it is an able argument in favor of concentration of work, economy, and the greatest efficiency in matters pertaining to the protection of inland waters Adopting this as an argument in favor of placing pollution of streams under the control of state boards of health, let us review the situation and note the present condition throughout the United States

Georgia, under date of April 12, 1907 reports no laws on this subject and apparently no prospect of securing any satisfactory laws bearing on the protection of inland waters in the near future The secretary of the State Board of Health, reporting this condition of affairs, says "Of course I am very much opposed to the pollution of our streams in this way"

A report from Florida, dated April 16, 1907, states

> A bill now pending before the legislature, if it passes (and there seems to be a good prospect of its doing so), will give the State Board of Health ample authority to deal with such matters

It is to be hoped that this bill passed

Not only does North Dakota not prevent the pollution of waters, but it actually gives permission so to do Section 2771 of the Revised Code of 1905 says

> Any city may empty or discharge its sewage into any river, but when a dam on such river is situated within the corporate limits of any city, the sewage shall be discharged below the dam

Iowa has no law bearing on the protection of inland waters, but some of her citizens have protected themselves from the pollution of waters in which they were specifically interested by enjoining offenders At different points in the state, municipalities and others have been compelled to provide sewage purification plants before discharging sewage into certain *streams*

A report from Virginia, dated April 15, 1907, says

> We made a strenuous effort to secure the passage of a bill, during the last legislature, relative to the pollution of the potable waters, but *met* with defeat

Michigan, while one of the leading states in general matters pertaining to sanitation, has up to date no important laws bearing on the protection of waters One of its officials, under date of April 16, 1907, says

> This is certainly a most important question and its magnitude is impressed on us in a very striking manner when we stop and consider the deaths that result annually through causes directly traceable to polluted water

The Revised Statutes of Maine, as amended in 1907 (Chapter 129), state

> Whoever knowingly and wilfully poisons, defiles or in any way corrupts the waters of any well, spring, brook, lake, pond, river or reservoir, used for domestic purposes for man or beast, or knowingly corrupts the sources of any public water supply, or the tributaries of said sources of supply in such manner as to affect the purity of the water so supplied, or

> knowingly defiles such water in any manner, whether the same is frozen or not, or puts the carcass of any dead animal or other offensive material into said waters, or on the ice thereof, shall be punished by a fine not exceeding $1,000, or by imprisonment not exceeding one year

This, if given its broadest interpretation, would seem to provide ample protection for the waters of Maine from pollution

In **Maryland** the law prohibits the discharge of any sort of waste into any stream or other source of water supply, whereby the drinking water of any person living on that stream is fouled or rendered unfit for drinking or domestic consumption, and provides a penalty for the violation of this provision The construction of the law is such, however, that it does not become operative until after the act of pollution has occurred and its consequences are possible of demonstration

Many other states are in the same position as Maryland in relation to the necessity of demonstrated pollution before any action can be taken This is certainly a most unwise and oftentimes expensive condition of affairs It means that instead of some responsible body giving advice which can be enforced before the construction of sewerage systems or waste disposal plants, individuals or municipalities may spend considerable sums of money on such systems or plants which the state may later condemn at great financial loss to the individual or municipality

In **California** the responsibility of protecting the waters of the state is not placed on any board or commission There are no direct laws bearing on the protection of inland waters, but something has been gained during the last winter looking to the protection of domestic water supplies An official, reporting on conditions in this state, says

> I have no sympathy with the idea so often expressed that the streams are the natural sewers In Nature people do not congregate in vast numbers on water courses or concentrate their filth to pollute them The streams are our natural water supplies and should be kept clean There is no doubt in my mind that both the disposal of sewage and the control of water supplies should be governed by some board Naturally the State Board of Health is the one to be clothed with such authority, and it should be supplied with ample funds for the performance of its duties along these lines If communities are left to themselves they will dispose of sewage in the easiest way possible, regardless of the well being of others My experience leads me to believe that this is a cause of a great deal of sickness Water supplies are established that are entirely unfit for use, due consideration not having been given to the source from which the water is taken If such matters were placed under state control I am sure that the expense involved would be repaid many fold in better health and lower death rates

A report from **Colorado**, dated April 15, 1907 says

> The law bearing on the pollution of streams is inadequate to the needs of this state There is no legal supervision over the inland waters Denver claims jurisdiction over the water sheds from whence it derives its supply, and this district covers territory to the extent of seventy five miles The only protection given is under Section 1376, Mills Annotated Statutes, Vol 1, page 949, which reads as follows 'If any person or persons shall hereafter throw or discharge into any stream of running water, or into any ditch or flume in this state, any obnoxious substance, such as refuse matter from slaughter houses, or privy, or slops from eating houses or saloons, or any fleshy or vegetable matter which is subject to decay in water, such person or persons shall on conviction thereof, be punished by a fine of not less than $100, nor more than $500, for each and every offense so committed" The same volume, page 943, states "If any person shall obstruct or injure, or cause or procure to be obstructed or shall in anywise pollute or obstruct any water course, lake, pond, marsh, or common sewer, or continue such obstruction or pollution so as to render the same offensive or unwholesome to the county, town, village, or neighborhood thereabout, every person so offending shall on conviction thereof be fined not to exceed $300, and every such nuisance may by order of the district court before whom conviction may take place, be removed and abated by the sheriff of the proper county"

In **Indiana** there are two distinct laws concerning the pollution of streams, but neither of these prevents the use of streams in the disposal of sewage An official, speaking of conditions in Indiana, says

> The discharge of sewage into streams, lakes, etc, is certainly an uncivilized act Now that sanitary science has demonstrated safe methods for the disposal of sewage, it is almost a crime to use the streams (especially when they are small) as carriers for sewage In Indiana this question is of the greatest importance, for with the exception of the Ohio and the Wabash rivers, all the streams are small Four good sized cities, one of which is Indianapolis, discharge their sewage into a creek called White River The state will be compelled, sooner or later, to take action in regard to this matter The question is, shall we wait until loss of money, disease and death force us to act? As for state control over public water supplies, there is no doubt but that this will be necessary in the near future It is frequently shown that municipalities have blundered greatly in securing their water supplies Money is lost and health and life endangered simply because scientific supervision has not been provided by the state The public sentiment in Indiana is strongly in favor of the enactment of laws regulating the discharge of sewage, the construction of sewers, and the purification and filtration of public water supplies The health authorities all over the state, the State Engineering Society, and the State Medical Society, have spoken emphatically in favor of state control

An official from **Kentucky**, under date of April 18, 1907, says

> The subject of the protection of inland waters presents the greatest problem that is before the sanitary authorities of the country at the present time The magnificent work done by the State Boards of Health of Massachusetts, New York and Pennsylvania should be repeated on a larger scale by the more rapidly growing western states It is comparatively cheap and easy to prevent the pollution of a stream, and it is enormously expensive to stop such pollution after it has been going on for many years

An official, under date of April 15, 1907, speaking for **Rhode Island**, says

> I believe that the State Board of Health should have complete autocratic control of all water supplies used for drinking purposes, and of all streams that are liable to be polluted with manufacturers' wastes The installation of any plant for the purpose of obtaining a supply of drinking water and the method in handling the same, also the manner of conducting any industry which is liable to pollute streams, should be under the control of the state board

An official, reporting for **New Hampshire**, under date of April 29, 1907, says

> A few years ago the legislature conferred on the State Board of Health authority to establish rules and regulations for the protection of public water supplies under certain conditions The board has already prohibited the discharge of sewage into many ponds and lakes that before were unprotected The attorney general has rendered a decision to the effect that the board has jurisdiction over other public waters than those from which municipal supplies are taken, and under this decision we have recently protected two of our famous lakes from pollution These facts are given simply to show that the State Board of Health has authority which is recognized The board has an indirect authority over the construction of waterworks and sewerage systems, for it may prohibit any municipality or corporation from supplying water for public use if the quality of the water is not satisfactory to the board, or in

other words, if the source appears to be a dangerous one The courts are authorized to issue an injunction against the use of such waters on request from the State Board of Health, thus making this law most effective My personal views are that the discharge of sewage into streams, lakes, etc, should be prohibited, and that the filtration of public water supplies is to be recommended whenever there is danger of sewage pollution

In MINNESOTA the law provides

> No sewage or other matters that will impair the healthfulness of water shall be deposited where it will fall or drain into any pond or stream, used as a source of water supply for domestic use The State Board of Health shall have general charge of all springs, wells, ponds, and streams so used, and shall take all necessary and proper steps to preserve the same from such pollution as may endanger the public health In case of violation of any of the provisions of this section, the state board may, with or without a hearing, order any person to desist from causing such pollution, and to comply with such direction of the board as it may deem proper and expedient in the premises Such order shall be served forthwith on the person found to have violated such provisions —R. L., 1905 Sec 2147
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> Every person who shall deposit or cast into any lake, creek, or river, wholly or partly in the state, or who shall deposit on the ice of any such lake, creek, or river, the offal from, or the dead body of any animal, shall be guilty of gross misdemeanor, and punished by a fine of not less than $100, or imprisonment in the county jail for not less than three months, nor more than six months —Sec. 5007

This law, so far as it goes, is excellent, but it is on the general plan of locking the door after the horse is stolen Municipalities and individuals can ignore the advice of the State Board of Health, so far as relates to the pollution of waters, but after the pollution can be demonstrated the State Board of Health is then in position to put such offending parties to considerable expense in correcting their errors

KANSAS seems to be coming to the front in sanitary matters An official, under date of April 15, 1907, says

> Our last legislature passed a law looking to the preservation of the natural waters of this state. This law places the water works systems, as well as the sewerage systems, under the control of the State Board of Health The new law contemplates the prevention of the discharge of untreated sewage into streams, etc., but permits sewerage systems now in operation to continue discharging into streams unless the State Board of Health deems it to the interests of the public health that such be discontinued.

NORTH CAROLINA appears to have good laws relating to the protection of water supplies In addition it gives the State Board of Health certain authority under Chapter 214, Laws of 1893, as amended Section 18 provides

> The said board shall from time to time consult with and advise the boards of directors of all state institutions, the authorities of cities and towns, corporations or firms already having or intending to introduce systems of water supply, drainage or sewerage, as to the most appropriate source of supply, the best practicable method of assuring the purity thereof, or disposing of their drainage or sewage, having regard to the present and prospective needs and interests of other cities, towns, corporations, or firms which may be affected thereby All such boards of directors, authorities, corporations and firms are hereby required to give notice to said board of their intentions in the premises and to submit for its advice outlines of their proposed plans or schemes in relation to water supply and disposal of sewage, and no contract shall be entered into by any state institution, city or town, for the introduction of a system of water supply or sewage disposal until said advice shall have been received and considered

VERMONT, under its laws of 1902, provides

> The State Board of Health shall have the general oversight and care of all waters, streams and ponds used by any cities, towns, villages or public institutions, or by any water or ice companies in this state as sources of water supply, and of all springs, streams and water courses tributary thereto It shall have power to call for, and when it calls for it shall be provided with maps, plans and documents suitable for such purposes at the expense of such city, town, village, public institution, water or ice company, and shall keep records of all its transactions relative thereto Said board shall have authority to prohibit any town, city, village, public institution, individual or water or ice company from using water or ice from any given source whenever in its opinion the same is so contaminated, unwholesome and impure that the use thereof endangers the public health The court of chancery shall have jurisdiction and power, on application thereof by the State Board of Health, to enforce by proper order and decree any order, rule or regulation which said board may make under and by virtue of this section

In WISCONSIN the law provides (Laws of 1905, Chap. 433, Sec 3)

> Before any city or village shall institute a water system, or system for water supply for the domestic use of its inhabitants, or a system of sewerage for the disposition of its sewage, such city or village shall submit to the State Board of Health the plans and specifications for such system, and both of the water system and the sewerage system, if a sewerage system exists or is proposed, and the State Board of Health shall examine such plans and specifications for the proposed system and the sanitary and hygienic features thereof, and no such system shall be installed or put in operation until the State Board of Health shall issue its certificate that such proposed system will not be in any respect insanitary or dangerous to the public health

An official, under date of April 16, 1907, says

> Wisconsin, like many other states, is confronting a serious proposition concerning her methods in the past of obtaining water supplies for domestic purposes and the disposition of sewage All of our lake cities have been in the habit of, and are still disposing of sewage into the same body of water from which they obtain their water supply It is an indisputable fact that the water in all of these cities from time to time is polluted and that serious epidemics of typhoid fever and other bowel troubles result from such pollution We must either do away with the present method of obtaining the water supply entirely from these great lakes or we must cease emptying the sewage into these bodies of water Since the passage of the law of 1905 we allow no sewage to go untreated into any of the streams, lakes or rivers of the state In all instances we require some system of treatment, at least the septic tank, and in some cases filtration in addition Our conclusions in each particular are based on local conditions We are strongly urging the necessity of pure water to begin with, rather than the purification of polluted waters

In CONNECTICUT there is no legal supervision over the construction of waterworks and sewerage systems, although the State Board of Health is frequently called on to advise in these matters and is always ready to do so An official, under date of April 18, 1907, states

> As the population grows more dense it becomes more and more necessary to adopt some method of sewage purification. Several cities of the state, such as Waterbury and New Britain, which formerly turned their crude sewage into the rivers nearby, have been compelled to stop the practice because of injunctions brought against them by people living below on the streams The filtration of drinking water is also constantly becoming more and more of a necessity in this state

In the DISTRICT OF COLUMBIA the pollution of streams by sewage is forbidden unless such pollution is sanctioned by the commissioners of the district The right of the commissioners to sanction such pollution is limited (30 Stats 231, Sec 13) Applications for permission must be in writing to said commissioners and must be accompanied by detailed plans of the system which it is proposed to construct and maintain, and no permit shall be issued until the commissioners are satisfied that such system can be maintained without nuisance or danger to the public health Other precautions are taken to protect waters against pollution While the protection of the waters of the district is directly under the control of the commissioners, the health officer of the district is directly responsible, so far as relates to sanitary consideration The engineering department has the controlling voice in matters relating to structural features

Probably the most advanced states at the present time in dealing with the protection of inland waters are Massachusetts, New Jersey, New York, Pennsylvania and Ohio It is not necessary to spend time in discussing conditions in Massachusetts That state has been in the forefront for years The State Board of Health has general oversight and care of all inland waters and of all streams and ponds used by any city, town or public institution, or by any water or ice company, as sources of water supply, and of all springs, streams and water courses tributary thereto The board may make rules and regulations to prevent the pollution and to secure the sanitary protection of all such waters as are used as sources of water supply Such board shall consult with and advise the authorities of cities and towns and persons having, or about to have, systems of water supply, drainage or sewerage as to the most appropriate source of water supply, and the best method of assuring its purity or as to the best method of disposing of their drainage or sewage with reference to the existing and future needs of other cities, towns or persons which may be affected thereby It shall also consult with and advise persons engaged or intending to engage in any manufacturing or other business whose drainage or sewage may tend to pollute any inland water as to the best method of preventing such pollution, and it may conduct experiments to determine the best methods of the purification or disposal of drainage or sewage Cities, towns and persons are required to submit to said board for its advice their proposed system of water supply or of the disposal of drainage or sewage, and all petitions to the general court for authority to introduce a system of water supply, drainage or sewerage must be accompanied by a copy of the recommendation and advice of said board

New Jersey is following closely along the lines pursued in Massachusetts A law approved March 17, 1899 (P L 1899, page 73), prohibits the pollution of waters which may be used for domestic purposes and gives the State Board of Health general supervision with reference to their purity, of all rivers, brooks streams, lakes, ponds, wells, springs or other reservoir in this state, the waters of which are, or may be used as, the source or sources of public water supplies for domestic use, together with the waters feeding the same, etc The same year a bill was passed establishing a State Sewerage Commission (P L 1899, p 536) It is unlawful for any person corporation or municipality to build any sewer or drain or sewerage system from which it is designed that any sewage or other harmful and deleterious matter, solid or liquid, shall flow into any of the waters of this state so as to pollute or render them impure except under such conditions as shall be approved by the state sewerage commission The plans of sewage disposal plants must also be submitted to the state sewerage commission in advance of their being built

In New York the State Commissioner of Health has power to take action regarding the pollution of streams, lakes, etc, by sewage, and any changes or alterations in the sewerage systems as they existed prior to 1903 must also be submitted to said commissioner for his approval Power is also given to make rules for the protection of watersheds when asked to do so by a municipality or by any of its citizens who are interested in any particular supply Dr E H Porter, state health commissioner, in his report to the legislature, 1906, says

> It is very probable that during the year 1906 2,000 deaths have occurred of typhoid fever in the state of New York As the estimated mortality of this disease is about 10 per cent, it needs no expert mathematician to figure out the distress, suffering and grief, the enormous loss—mental, physical and financial—that these thousands of cases of typhoid fever have cost And yet we know that it is almost entirely a preventable disease We know it to be, in great part, a water borne disease Two hundred and fifty epidemics of typhoid fever have been collected and analyzed in Great Britain, and in every one the pollution of the water supply was the source of the evil
>
> The main pollution of our streams and lakes comes from the sewage of cities and towns, but to this must be added the pollution from drains, cesspools, refuse, manufacturing waste, etc These conditions are inexcusable and shameful They have existed for years, they should not exist another day

The laws of New York (Chap 661, 1893) provide that the State Board of Health shall make rules and regulations for the protection of water supplies New York, following the example of Massachusetts, now employs a competent and increasing force of sanitary engineers

Ohio is far in the lead of all other states west of Pittsburg in matters pertaining to the protection of inland waters I believe it is the only state of the middle western group that has authority to compel the submittal of all plans for water and sewerage systems for approval by the State Board of Health before their construction It is one of the leading states in the study of the purification and proper disposal of sewage The State Board of Health in Ohio, patterning after Massachusetts, is doing excellent work in matters pertaining to the protection of its water supplies It has in its employ a competent corps of sanitary engineers

Pennsylvania is the most recent state in the onward march for the protection of inland waters This state has a typhoid fever record of which it may well be ashamed The recent epidemic at Butler seems to have inspired the legislature with a desire to improve the sanitary conditions of the state In 1905 it not only revised its Department of Public Health, but it also passed a law "to preserve the purity of the waters of the state" Section 3 of this law states

> No municipal corporation, private corporation, company or individual shall construct waterworks for the supply of water to the public within the state, or extend the same without a written permit, to be obtained from the commissioner of health, if, in his judgment, the proposed source of supply appears to be not prejudicial to the public health The application for such permit must be accompanied by a certified copy of the plans and surveys for such waterworks, or extension thereof, with a description of the source from which it is proposed to derive the supply, and no additional source of supply shall subsequently be used for any such waterworks without a similar permit from the commissioner of health

Section 5 of the same law also places the construction of sewerage systems under the control of the State Commissioner of Health

Since Pennsylvania has awakened to its responsibilities it has created an engineering department consisting of one chief engineer, three assistant engineers and eighteen inspectors to look after the sanitary needs of the state as relate to water and sewage

The subject of pollution of streams was thoroughly discussed at the conference of State and Territorial Boards of Health with Surgeon General Wyman at Washington, May 23, 1906 In response to a roll call of states represented at this conference the condition in the various states is shown as follows

Colorado—State board has control
Delaware—State board has control
District of Columbia—Health department has no control
Florida—Only advisory powers
Kansas—Only advisory powers
Louisiana—No control
Maine—No control
Maryland—No control
Massachusetts—State board has control
Michigan—No legal control
Minnesota—State board has control
Missouri—No control
Nebraska—No control
New Jersey—State has control but only partially under State Board of Health
New York—State health department has control
North Carolina—Advisory control only
North Dakota—No control
Ohio—State board has control
Porto Rico—State board has control
Rhode Island—Has control over water supplies but not over sewage disposal
Tennessee—No control
Utah—No control
Vermont—State board has control.
Virginia—No control
Washington—No control
Wisconsin—State board has control

From the foregoing it is to be noted that states are gradually awakening to their responsibilities in the protection of inland waters and that almost universally the responsibility of protection is placed on state boards of health or state health commissioners In certain instances special commissions have been abolished and the work formerly carried on by them placed under the control of state boards of health

In states not already enumerated the only protection for waters is that given by the law which governs personal and property rights[1] The Roman law held that rivers belong to a class of things *utilitatis innoxiæ*, and that of natural right, flowing water is common property, that all rivers that flow perpetually are public and that property in flowing water can not be taken to belong to any one The English common law held that while land is the subject of private property, flowing water is not The same principles are the foundation of the American law of pollution The existence of a remedy in the law for injuries caused by pollution of waters is guaranteed by the fundamental rule that for every injury there is a remedy The right to an injunction and to damages on account of the discharge by cities and individuals of sewage into streams, thereby polluting them so as to render them unfit for ordinary uses, has been clearly established

From this review of conditions in various states it will be seen that provisions for the protection of inland waters is nothing new The question involved at the present time is whether such protection shall be through civil action or criminal prosecution The general trend seems to be to place the protection of such waters under the control of sanitary authorities, and to anticipate in their protection rather than to wait until pollution has taken place before action is begun

The old idea that pollution may be permitted up to a certain dilution has reference only to the creation of a nuisance and has no place in efforts to prevent the transmission of water-borne diseases Another old idea of stream self-purification within a comparatively short distance is no longer tenable

The protection of inland waters should be under the control of state boards of health in all states, as is now the case in Massachusetts, New York, New Jersey, Pennsylvania and Ohio This is important both from the economic and the sanitary point of view

DISCUSSION

Dr Henry D Holton, Brattleboro, Vt, said that state boards of health are the proper ones to have charge of the waters of a state In Vermont five years ago the legislature placed all the streams lakes and bodies of water under control of the State Board of Health and gave them power to prohibit the pollution of any stream or body of water, the law provides a penalty for the placing of dead animals, or animal substances, not only in the stream and the immediate border of the stream, but in such proximity that it may be washed *into or drawn into the stream* It also requires the board to exercise its authority and give its advice to towns or municipalities which are introducing water systems, and advice with regard to their sewerage systems That law, during the last two years, prohibited, in five different towns, the use of a water supply polluted by sewage The warning notice to three towns sufficed to make them provide pure water—or to take steps to do so It takes time, of course One or two towns had no authority to raise money for the purpose, and the last legislature gave them the power to bond for water purposes So in two cases an order had to be issued prohibiting the use of the water If that order shall not have been complied with, Dr Holton said that the court of chancery will be asked to enjoin the towns, and then any one who uses the water after that is in contempt of court and may be fined accordingly It seems to be working admirably, and public opinion in the state sustains the board in any action so far taken Dr Holton spoke of this as showing that the people are ready for action to correct the pollution The question comes up, what rights, if any a community or an individual has acquired in discharge of its sewage for a series of years into some stream or body of water In Vermont it has been ruled that an individual or a community has no right to perform any act that shall be deleterious to the purity of the water or the public health of the community, that it can not acquire a right by any length of time in the doing of this wrong act in that manner No case has yet been brought before the courts to prove that, but Dr Holton has no doubt what the decision will be if any one should have the temerity to do so

Dr. J H Stolper, Krebs Okla, said that the suit of the State of Missouri against the city of Chicago, for emptying sewage into the Illinois River, has shown that the question of how far pollution will extend is not settled Courts, as a general rule are confused when it comes to questions of expert medical testimony

Strange to say, the question of control of sanitation on railways has received little attention at the hands of the medical profession For five years different railways have tried to have some system of sanitation, without any support from any board of health, and to day, as far as Dr Stolper's knowledge extends, there are only the states of Texas, Kentucky, Wisconsin (and Minnesota is falling in line) with some legal requirements in regard to railway sanitation He thought that the matter of the spreading of infection by passenger trains should demand the attention of this Section, and he suggested that a symposium on railway sanitation be arranged next year

Col. William C Gorgas, Ancon, Canal Zone, Panama, said that the water supply at Panama is entirely under the control of the commission, which can pass any law considered necessary with regard to it The isthmus is a mountainous country, rolling, with very precipitous hills, and mountain streams come down to join the Chagres in every direction Three or four of these streams have been dammed so as to give a large supply, with a reservoir containing about 800,-

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[1] Taken from A Summary of the Laws Relating to Pollution of Waters of Lakes and Streams, by Rome G Brown attorney at law Minneapolis See also A Review of the Laws Forbidding Pollution of Inland Waters in the United States," by Edwin B Goodell Water Supply and Irrigation Paper No 103 U S Geological Survey

000 000 gallons for the city of Panama There is one nearly as large at Colon, also two or three smaller ones for the little villages along the canal They seem to give a very good and a very pure supply The disposal of night soil has been a problem The Zone now has a population of about 100,000 people, whose sewage is, roughly speaking, disposed of about as follows That of the city of Panama empties into the Pacific Ocean, of Colon, into a canal that is cut through a little island and eventually gets into the sea, and along most of the towns, spoken of as camps—consisting of frame buildings, more or less temporary—various expedients for sewage disposal have been devised, but four fifths of these camps have sewerage systems emptying into the little streams contiguous That was allowed from the fact that the construction had been considered temporary All these towns will, of course, be abandoned None of said streams is used as water supply for the population

Dr C Hampson Jones, Baltimore, said that in Baltimore there had been for a number of years a struggle to maintain the purity of the water supply which comes principally from the Gunpowder River The pollution of this stream—to a slight degree at all events—is undoubted Baltimore led by the State Board of Health in the person of Dr Fulton, attempted some years ago to get rid of certain known polluting sources The judgment of the law and the judgment of the facts being in the hands of interested parties, it invariably resulted in defeat The board, however, has been able to get rid of a number of nuisances, more by persuasion than by law It seemed to him that there is nothing left but to place the power absolutely in the State Board of Health, and also to educate the people up to the point of supporting that board of health If it is left to the question of law, with the power of a few people to turn aside the law in its action, just so long there will be trouble similar to that in Maryland

Dr G T Swarts, Providence, R I, said that water may be polluted by waste from factories so as to become a nuisance, even if not used for drinking purposes A nuisance ranks very high along with the question of health, and appeals very frequently to the populace and to legislatures, perhaps, more powerfully than the question of health If a state looks out for the pollution of its own supplies or its own waterways it will often be doing a great benefit to the neighboring state, and there is one of the difficulties that must be contended with—that while one state keeps its waterways uncontaminated, an adjoining state may be polluting its sources in such a way as to contaminate the waters of the other state which has no means of redress There is where the U S Public Health and Marine Hospital Service or some national board should have jurisdiction so as to prevent pollution

In Rhode Island it is a difficult matter to obtain laws owing to the conservative ideas passed down from ancestors, and to ask for the cessation of pollution from the industrial sources is to attack the industries, which, of course, are influential factors Dr Swarts said that they have undertaken, therefore, to meet them on their grounds by joining forces with the United States Hydrographic Bureau and during the past nine months have combined our laboratory and chemist with the chemist of the Hydrographic Bureau to determine the amount of pollution coming from the various industries for the purpose of inducing them, by request and by cooperation, to stop that pollution, and, by taking no aggressive steps in the matter, they have had the cooperation, so far, of almost all of the industries polluting the small streams of Rhode Island It has developed in many cases that there is a certain amount of recoverable matter from the refuse material which, in the course of a year or two, would be a source of profit to the industry He thought that, if the Hydrographic Bureau could extend its influence or powers still further, so that other states would take advantage of it, it would be a great benefit All interested in hygiene should urge their representatives to encourage this work of the Hydrographic Bureau, which is the cessation of the pollution of streams

Dr William H Sanders, Montgomery, Ala, said that it is hoped in Alabama to lay, very soon the foundation for placing the control of the pollution of streams under the authority of the State Board of Health A necessity for the creation of a national board of health lies in the pollution of streams that flow out of one state into another state or through several states Of course, one state can only protect its streams within its own borders, and can have no authority whatever over a stream coming out of an adjoining state into it Recently Dr Sanders had had occasion to look into the law of nuisances A legal book of five or six hundred pages has recently appeared which refers to a great many decisions on the pollution of streams and very uniformly the courts have upheld the principle that no persons, corporations or what not have any right to pollute streams of water This principle is upheld That a man who buys property on a stream below a point at which the stream becomes polluted, although the pollution existed before he acquired the property lower down on the stream, is not by that fact prevented from bringing suit in the courts for damages although the nuisance existed at the time he acquired property and built his premises lower down Dr Sanders had previously supposed that this principle would not hold, that if a man with his eyes open acquired property on the stream below the point at which it was polluted, he was estopped from making any complaint, but numerous decisions uphold the principle that health and life are superior to private and material interests

Dr Liston H Montgomery, Chicago, said that he would go a step farther, so as to have such supervision of the inland streams, canals, rivers and lakes, as to prevent the granting of franchises to various corporations—gas and electric light companies, railroads, manufactories, etc—as they become careless and tend to undo this very important reform by permitting their employés to pollute streams The Chicago water supply is derived from Lake Michigan, a few miles from the shore, and most of the sewage goes down the drainage canal into the Illinois River, and thence into the Mississippi River Dr Montgomery thinks that a national board of health has been already too long delayed, it is the imperative, paramount duty of our government to protect the welfare of the people in public health matters, as our government was instituted to promote the welfare of mankind It should have the cooperation of all powers, national, state and interstate, throughout the Union

Dr W H Donaldson, Fairfield, Conn, said that those who live in manufacturing districts desire light on some practical sanitary way of disposing of factory wastes which are now such a large factor in stream pollution How health authorities can instruct owners of large factories, located on streams to dispose of their sewage, wash waters, dyestuffs, etc, with the intake and discharge in close proximity, is a problem separate from ordinary sewage disposal

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STREAM POLLUTION AND ITS PREVENTION *

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BOSTON

The various sources of stream pollution are so well known that it is unnecessary to describe them in any considerable detail to an association like this

The effect of stream pollution, so far as the sanitary questions involved are concerned, may be considered from two points of view 1, the use of the stream as a source of water supply, and, 2 the influence of its condition on the health and comfort of those living in its neighborhood

It is not the purpose of this paper to consider the pollution of streams and its prevention from the point of view of their use as sources of public water supply While a great many cities and towns in this country obtain their water supplies directly from rivers draining populated areas, the danger of the use of such sources is now well understood, and the more progressive communities have already taken steps to guard against the injury to the public health that results from the use of such sources. The use of unpurified river waters for domestic purposes is rapidly passing, and the time is probably not far distant when such use shall have wholly ceased.

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City June 1907

On the other hand, the problem of the prevention of stream pollution from the point of view of the health and comfort of those dwelling along our rivers is one which has as yet received, on the whole, comparatively little attention in this country.

The chief sources of stream pollution are, first, domestic sewage—the wastes from water-closets, bath-tubs, sinks, etc., in dwelling houses and other buildings—and, second, manufacturing wastes—the liquid wastes resulting from processes carried on in manufacturing establishments, prominent among which may be mentioned tanneries, woolen mills, paper mills, and gas works, though there are many others.

All streams which drain populated areas are affected in a greater or less degree by the wastes of human life and industry, the effect of which may be said in general to be proportional to the density of the population within the watershed. This rule is subject to many exceptions, since it makes a great difference whether sewage is discharged into a stream directly or finds its way there only after passing through the soil. Manufacturing wastes also may greatly injure the condition of a stream affected but little by sewage, and such wastes are often the chief cause of trouble in the most seriously polluted streams.

In general, however, the rule is true, and consequently we find the worst trouble from stream pollution in densely populated regions, especially those in which a great amount of manufacturing is carried on. In this country the most serious cases of stream pollution are found in densely populated areas in the manufacturing states.

The literature of this subject is very extensive, especially in England, where the agitation for the prevention of stream pollution began some fifty years ago at a time when conditions there had reached the stage where a commission on the sewerage of towns denounced it as an "evil of national urgency requiring the earliest and most serious attention."

The agitation relative to the prevention of the pollution of streams in England was followed several years later by a similar agitation in this country, induced perhaps in part by the condition of the English streams and the realizing sense of those who had examined the subject that we were traveling rapidly in the same direction, but chiefly by the evidently increasing pollution of our own rivers, especially in Massachusetts and in densely populated watersheds in other eastern states.

An investigation of the condition of the streams of Massachusetts carried on by the State Board of Health in 1876 showed that at that time some of the streams had already become seriously polluted. No control over the streams was exercised by any one, all the waters at that time being left to the ordinary rules of common law, concerning which the board makes the following statement in its report of the year mentioned:

> Any defense against the impurities which so conveniently flow into our waters from the settlements and works on their banks has thus far been merely nominal, that is, the law can be used to prevent a nuisance from continuing to be poured into the river, but it is not used because the process is too slow, cumbersome and expensive.

Cities and towns at that time, as sewerage became necessary, discharged their sewage directly into the nearest stream or other convenient body of water with entire disregard of possible consequences, while manufacturers used the streams as they pleased.

The condition of several of the streams was rapidly becoming intolerable, and the question of dealing with the pollution of streams was taken up by the legislature and committed to a special commission authorized to employ experts who entered on their work in 1884 and reported to the legislature in 1886.

This commission after a thorough investigation and a consideration of various plans of controlling the inland waters of the state, recommended the appointment or designation of a commission to have a general oversight and care of the inland waters of the state, with power to advise cities and towns, manufacturers and others as to the disposal of their sewage and wastes, with a view to the protection of the public interests. Their conclusions and recommendations with reference to the duties of this proposed commission were, in part, as follows:

> Let these guardians of inland waters be charged to acquaint themselves with the actual condition of all waters within the state as respects their pollution or purity, and to inform themselves particularly as to the relation which that condition bears to the health and well being of any part of the people of the commonwealth. Let them do away, as far as possible, with all remediable pollution, and use every means in their power to prevent further vitiation. Let them make it their business to advise and assist cities or towns desiring a supply of water or a system of sewerage. They shall put themselves at the disposal of manufacturers and others using rivers, streams or ponds, or in any way misusing them, to suggest the best means of minimizing the amount of dirt in their effluent, and to experiment on methods of reducing or avoiding pollution. They shall warn the persistent violator of all reasonable regulation in the management of water, of the consequences of his acts. In a word, it shall be their especial function to guard the public interest and the public health in its relation with water, whether pure or defiled with the ultimate hope, which must never be abandoned, that sooner or later ways may be found to redeem and preserve all the waters of the state. We propose to clothe the board with no other power than the power to examine, advise and report, except in cases of violation of the statutes. Such cases, if persisted in after notice, are to be referred to the attorney general for action. Other than this, its decisions must look for their sanction to their own intrinsic sense and soundness. Its last protest against wilful and obstinate defilement will be to the general court. To that tribunal it shall report all the facts, leaving to its supreme discretion the final disposition of such offenders. If such a board be able to commend itself by its conduct to the approval of the great court of public opinion, it will have no difficulty, we think, in materially reducing the disorders and abuses which are threatening to give great trouble in future if not speedily checked. If, however, we err in this expectation, and more drastic measures prove indispensable, the mandate of the state can always be invoked to re-enforce its advice.

The legislature, acting on the advice of the commission, in 1886, passed a law embodying practically these conclusions, and committed its enforcement to the State Board of Health, reorganized for the purpose, and two years later strengthened the law in a considerable degree by providing that all petitions to the legislature for authority to introduce a system of water supply, sewerage or drainage should be accompanied by the advice and recommendation of the State Board of Health thereon.

The same legislature that passed the first law relative to the prevention of the pollution of streams was called on to take action relative to one of the streams of the state, the Blackstone river, which had already become so grossly polluted as to be a public nuisance, and a law was enacted directing the city of Worcester, within four years from the passage of the act, to purify its sewage before discharging it into the river The four years ended in June, 1890 Five years later—that is, in 1895—the aid of the court was invoked to carry out the law, and an order was made by the court in 1896 directing the further purification of the sewage of the city Ten years after that decision—or in 1906—the matter has again reached the courts, and a further order is asked for by those who dwell in the valley of the river and suffer from its offensive condition Thus, after more than twenty years have elapsed since the law directing the removal of Worcester sewage from the Blackstone river was passed by the legislature, the nuisance caused by the pollution of that stream is as bad as ever

This example of an attempt to effect the purification of a river after it has once become grossly polluted shows how slow the process may be in some cases

Returning to the report of the commission of 1886, it will be seen that it recommended the granting of advisory rather than mandatory powers to the board that was to have charge of the protection of inland waters This was especially essential in a state like Massachusetts, where manufacturing from the earliest years had been steadily favored by the law-making power, and the streams and unnavigable waters had been, as the commisson states in its report, substantially dedicated to manufacturing uses The results, however, have shown the wisdom of this recommendation

The carrying out of the work was committed to a board composed of physicians, lawyers, engineers and business men who have served without pay

The board from the beginning examined each application for advice with reference to water supply, sewerage or sewage disposal, or other questions brought to its attention under the act, with the greatest care, with the advice and assistance of the ablest engineers, chemists and biologists obtainable, and who were not authorized to do similar work within the limits of the state They began at once to make a systematic chemical examination of all of the various rivers at such points as would show most clearly their condition, and collected statistics as to the sources of pollution of each stream, reporting the results from time to time to the legislature

While all cities, towns and individuals intending to introduce new systems of water supply, drainage or sewerage were required by law to submit their plans for the advice of the State Board of Health, they were not required to follow that advice It is interesting, under the circumstances, to note that practically from the beginning none cared to let that advice pass unheeded The advice of the board has operated in effect as an order, and one of its great advantages has been that it preceded any other action, except the preparation of plans

In the beginning of the enforcement of the law the board found that cities, towns and factories were already discharging sewage and wastes with the greatest freedom into the rivers and other inland waters, and many of the streams of the state had already become seriously polluted

There is no doubt that a stream or river of considerable size may receive a considerable quantity of sewage without objection if it is not used as a source of water supply, and, in carrying out the law relative to the prevention of stream pollution in Massachusetts, cases were found in which such disposal of sewage or manufacturing waste would not be objectionable, for the time being at least Under such circumstances the disposal of sewage into streams has been advised in some cases, but such disposal has been carefully guarded by a time limit whereby the use of the stream as a place of sewage disposal might be terminated whenever it should seem necessary or desirable to do so

Moreover, in all such cases it has been the practice to determine first the best practicable plan of purifying the sewage of the city or town before authorizing its disposal into a stream, in order that the change from the latter method of purification might be made with the least possible trouble and expense As a further saving in the ultimate cost of sewage disposal works, the board has advised in all new systems of sewers the keeping of the sewage and storm water wholly separate, admitting to the sewers only such wastes as were liable to create offensive conditions when discharged into the streams, and keeping roof water and other surface and ground drainage wholly out of them The insistence on the separate system of sewers has been of the greatest advantage in all cases where subsequent purification of the sewage has become necessary

In all the laws affecting the pollution of streams in Massachusetts the legislature has made two notable exceptions, viz, the Connecticut and Merrimack rivers, the largest streams in the state, each of which receives much pollution before entering its limits They are still, however, capable of receiving and properly disposing of a larger quantity of sewage than they now receive, and will probably continue for the present at least, to be excluded from laws relating to the pollution of streams In the case of the other streams, the dividing line between the condition where it is permissible to discharge sewage into the stream and the condition wherein such discharge is likely to be objectionable is, of course, uncertain, and each case has to be judged on its merits

In general, the discharge of sewage into a stream is unlikely to be objectionable if the flow of the stream during the driest periods amounts to as much as six cubic feet per 1,000 persons in the town to be sewered Even a smaller dilution may not be objectionable in some cases where the stream is unaffected by other wastes On the other hand, an allowance must necessarily be made in most cases for the growth of the town and an increase in the quantity of sewage, and it is not usually desirable to allow the discharge of sewage into a stream at all unless the dilution is somewhat greater than the amount indicated Other conditions also may have a material and perhaps a decisive influence in determining whether the sewage of a given town may be discharged into a stream or not

The total number of inland towns in Massachusetts having sewerage systems at the present time is 60 Fourteen of these discharge their sewage directly into the Connecticut and Merrimack rivers or into tributaries of these streams at their points of confluence Of the remaining cities and towns, twenty-five now purify their sewage and discharge only the purified effluent into the streams, while twenty-one continue to discharge their sewage into the streams without purification Of these twenty-one cities and towns which are now discharging their sewage untreated into inland waters exclusive of the Connecticut and Merrimack rivers, about one-third are doing so under the authority of the advice of the

State Board of Health, which limits the time within which such discharge can continue, and the remaining fourteen represent the number of cities and towns whose systems were in existence previous to the passage of the law relative to the pollution of streams, and whose privilege has not since been modified.

In more recent years, while the advisory policy with reference to the control by the state over its inland waters has been continued, this policy has been materially strengthened by inserting in each new act passed by the legislature authorizing the introduction or modification of systems of water supply, drainage or sewerage, a clause requiring the approval of the plans by the State Board of Health.

As a result of the legislation of 1886 and the subsequent acts strengthening that legislation, the pollution of streams by the sewage of cities and towns has been arrested, and progress has been made in reclaiming from pollution some of the streams which had already become seriously injured at the time the act was passed. There still remain, however, several cases of serious stream pollution in Massachusetts by the sewage of cities and towns, most of which, however, are already in process of removal.

In dealing with the pollution of streams in Massachusetts one of the most serious problems presented has been that of the Neponset river, a stream which has been grossly polluted almost wholly by wastes from manufacturing processes in tanneries, paper mills, woolen mills, gas works, etc. All, or practically all, of these establishments were in existence at the time the laws relating to the pollution of streams were passed, in fact, in many cases, these manufactories had been in operation for many years.

In this case the question of preventing the nuisance caused by the stream was brought to the attention of the legislature, which directed the State Board of Health to investigate the causes and recommend measures for preventing the trouble. The question was complicated by a question of the drainage of extensive marsh lands along the stream, and the whole matter was the subject of consideration by the legislature for five successive years before action was finally taken. The law then passed did not prove strong enough to secure satisfactory results, and after four years of trial a law was finally passed requiring the purification of the manufacturing wastes by all persons discharging such wastes into the stream or any of its tributaries under penalty of a heavy fine for neglect to observe its provisions. Under this act, which was passed last year, manufacturers have quickly taken steps to prevent their wastes from creating further offense in the stream.

It is important, before closing, to call attention to one other and most essential factor in carrying out successfully the work of preventing the further pollution of streams in Massachusetts and recovering the ground which had already been lost there when this work was first undertaken, and that is the provision made by the legislature which authorized the State Board of Health to make experiments on the purification of sewage and manufacturing wastes so that the board might be in a position to advise cities, towns and manufacturers as to the most appropriate and satisfactory methods of disposal or purificaton of such wastes.

Very soon after the passage of the law an experiment station was established by the board at Lawrence and experiments have been made there continuously for the last twenty years on the purification and disposal of sewage, and of all kinds of manufacturing wastes, beside the work done there in the purification of water and in other investigations in connection with the work of the board on this and similar subjects.

At this experiment station were made the first systematic investigations on the purification of sewage on a practical scale the results of which have been the basis of the advice of the board in dealing with problems relating to the prevention of the pollution of streams.

The results of these experiments and investigations need not be considered here further than to state that they have stood the test of many years in the purification of the sewage or other wastes of a large number of cities, towns and manufacturing establishments.

SEWAGE PURIFICATION BY SEPTIC TANK AND CHEMICAL PRECIPITATION *

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The obvious impossibility of discussing in any detail either the septic tank or chemical treatment of sewage, in the twenty or thirty minutes allotted makes it necessary that the subject be treated very generally, depending on the discussion which may follow to bring out special points of interest. Fortunately, the satisfactory account of these two methods of sewage disposal given by Professor Winslow and Mr. Phelps in No. 185 of the Water Supply and Irrigation Papers of the U. S. Geological Survey makes it unnecessary to devote any time either to the theoretical or historical side of the subject, and, therefore, the practical aspect will be the only one touched.

The two extreme views now held in this country regarding sewage disposal may be represented on the one hand, by those who hold that all water for domestic purposes must be purified and consequently there is no need of wasting time and money on sewage, and on the other hand, by some authorities who claim it is an absurdity to have to repurify water deliberately polluted, and that the solution of the pure-water problem lies in the most rigid and efficient purification of sewage and other wastes which by any natural means can reach a properly protected water supply. It is evident, without attempting to indicate the difficulties which must attend the proper enforcement of either of these plans alone, that for the present at least the only safe method is to purify both water and sewage whenever practicable, and the discussion in this country in legislative halls, as well as before scientific associations, regarding proper sewage disposal, would seem to indicate that to provide such a double safeguard may not be as impossible as was at once supposed.

It will probably be admitted that the question of sewage disposal is quite distinct from that of water purification both from the standpoint of the public as well as that of the engineer and biologist. Usually when a community is forced to the sanitary consideration of its sewage problem it is for the benefit of some other town in the vicinity, and the interest can never be such a lively one as that concerned with the procuring of a pure water for local consumption. A town which would not hesitate to spend a million for pure water absolutely refuses to devote one-tenth of that amount for sewage purification. Within the last year a

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

community with which I was associated overwhelmingly voted down the proposition to borrow the $250,000 00 necessary to install an efficient and modern sewage disposal plant This, too, in the face of threats from the state health officer and several pending suits from individuals through whose property the stream of sewage flowed It is interesting to note that an analysis of the vote showed that the proposition was defeated not by the property owners and better class of citizens on whom the immediate cost would have fallen, but on the small renter who seemed to have the idea that the expenditure of so much money for sewage disposal would increase his rent and other living expenses

Thus it would seem that there now exists a necessity for the perfection of methods which, while in themselves not altogether ideal, will afford some relief and to a considerable extent answer the purpose of purifying sewage For, although there are a few shining examples of cities willing to spend the time and money necessary to find the best, we are not yet at the stage in this country where we can hope to convert the average community to this practice

Furthermore, the efficient and economical disposition of sewage is vastly more dependent on local conditions than that of the purification of water We certainly are not now at the place where any single method of treating sewage can be universally recommended, and, even though there might be agreement on the best theoretical means of accomplishing this purpose, the chances are that methods quite distinct must always be used to meet peculiar or even common conditions

While most authorities on sewage disposal maintain that the problem of purification does not involve the question of a sterile effluent, there can be no doubt that the legal interpretation of what a purified sewage should be has been for the most part opposed to this view And since, at the present time, the strongest incentive to any community to properly dispose of its sewage is the threatened damage suit of a neighboring town, some attention should be paid to the production of an effluent that will meet the requirements of the law Certainly to the lay mind any method incapable of insuring an effluent free from disease germs would seem, to that extent at least inefficient

The septic tank method of treating sewage is generally used in combination with one of several other processes, merely the preliminary breaking down of the organic matter being accomplished in the tank For purposes of this discussion, however, it will probably be well to dwell more particularly on the results obtained from the septic tank alone, with only a brief reference to the subsequent treatments with which it is used in combination

A septic tank, as you no doubt know, is simply a suitable receptacle in which raw sewage may be confined for a length of time sufficient to permit the bacteria naturally present to decompose the solid matter, as well as much that is already in solution or comes into solution as the result of the decomposition This time varies according to the character and age of the sewage, the temperature, etc , and may be as short as four hours or as long as forty-eight hours Longer periods of treatment do not seem to have the beneficial effect that might be expected The tanks may or may not be covered they may be provided with preliminary grit chambers, and may have various automatic devices to control the flow of the sewage but the principle involved is the same in all cases, and any condition which will permit the most active growth of the decomposing bacteria is the one most desired

There are comparatively few places in which the septic tank with no subsequent treatment has been resorted to Indeed, the septic tank alone can hardly be considered as a means of disposing of sewage, as the effluent will frequently come under a technical definition of sewage as truly as that which flowed into the tank The physical character of the sewage is usually greatly improved, however, and its discharge directly into a stream is permitted under conditions which would make such a disposition of the raw sewage impossible The chief function of the septic tank is to reduce the sludge One properly constructed can generally be counted on to take out over 50 per cent of the suspended solids, sometimes as high as 75 per cent There is the greatest variation regarding the retention of the stored solids, and one objection which has been urged against the use of the septic tank has been the frequency with which it has to be cleaned There seems to be reason for believing, however, that such an objection may not be overcome when the conditions on which the optimum efficiency of a septic tank depends are better understood Certainly the great difference in tanks which have to be cleaned every few months as compared with those which have run for years without being emptied is not due entirely to the difference in the character of the sewage There is probably no method which can be depended on to remove such a high percentage of the suspended solids, at such small expense, as the septic tank, particularly in the many localities in this country where neither land nor suitable sand or gravel can be obtained for some of the other processes On the whole however, the septic tank method alone is not one to be recommended, although, in the case of very small communities or of institutions, it may be resorted to as a stepping stone to something better Being cheap and requiring comparatively little attention, it is more apt to be adopted than a more efficient and complete type of sewage disposal While it is to be hoped that the septic tank alone as a means of treating sewage will not be tolerated ten years hence, we are hardly at the place where we can afford to discourage any effort which must in a short time tend to develop more satisfactory and thorough means of solving a difficult problem

The most common method of using the septic tank is as a preliminary treatment, the effluent being subsequently passed through some sort of filter or contact bed It does not come within the scope of my subject to discuss the various methods which have been devised for treating the effluent from the septic tank, but the fact that this is the almost universal practice emphasizes the point that septic tank treatment alone can not be considered as one properly disposing of a sewage

In England as well as in this country the use of the septic tank combined with some system which would permit of the action of oxidizing bacteria, has given most excellent results, and the failures seem to be due to mismanagement rather than to any fault in the method Throughout the middle west, where conditions are not so favorable for intermittent filtration, the septic tank is most successfully combined with a contact bed, and the good results obtained would seem to indicate that the possibilities of this combination are by no means exhausted The septic tank then may be considered as a most important and in some cases necessary preliminary method of treating sewage, which, in conjunction with a contact bed or filter, is capable under proper management of producing an affluent which meets the requirements of many communities at the present time. It is not a sterile effluent, however, and it would appear that conditions in this country may in the future require still further treatment before a thoroughly satisfactory effluent is obtained.

One of the oldest methods of attempting to dispose of sewage is by the use of chemicals. In this country possibly 10 per cent. of those cities making an effort to treat their sewage in a sanitary manner use a chemical precipitation method. In Europe, on the other hand, chemicals are widely used, and although newer methods are being experimented with and installed, there are a considerable number of authorities who cling to chemical precipitation as being best suited to meet their special conditions.

While the number of chemical combinations and devices for using them in treating sewage are too numerous to mention, practically the only ones used on a large scale at the present time are those depending on lime, with either sulphate of alumina or sulphate of iron as precipitants. In this country sulphate of iron with lime is used almost exclusively. That a satisfactory effluent can be obtained by properly treating sewage with chemical precipitants has never been denied. By using a sufficient amount of lime and iron sulphate and allowing proper time for sedimentation the resulting effluent is usually all that could be desired. All odors and tastes are removed, and by combining the use of copper sulphate or chlorid of lime the samples taken have been found to be free from colon bacilli and all similar organisms.

The chief and most serious objection to any chemical precipitation method has been the cost. For, in addition to the original cost of the chemicals, the disposal of the resulting sludge adds considerably to the expense of the operation. In some instances the wastes may run as high as fifty tons per million gallons of sewage, although in many cases it is not more than half this amount. While it is true that a very large percentage of the sludge is water, it requires considerable time and money to get the water out, and the "press-cake" is at present of little if any value. When some one devises a profitable use for the sludge from chemical precipitation the chances are that the method will be more widely employed.

Some cities seem to be especially well adapted by natural conditions to use the chemical precipitation method of sewage disposal. Worcester, Mass., is a well-known example of a town having enough sulphate of iron from factory waste in its sewage to need only the addition of lime to form a proper coagulum. Providence, R. I., is another instance of a city using chemicals with satisfactory results, and while here it is the natural situation which makes the system so successful, there are other places in this country so situated which might do well to substitute a similar chemical precipitation plant instead of turning the raw sewage directly into the sea. There are likewise institutions and factories where the waste is of such a character as to practically necessitate a chemical treatment. The expense, of course is large, and probably no city would be justified in spending such an amount, but the point is there exist special conditions for which chemical precipitation methods should probably always be used. Certainly the method should not be neglected at the present time simply because it is not universally adapted to all conditions in all parts of the country.

All methods of sewage purification may be said at the present time to be more or less in the experimental stage, at least when attempting to adapt them to changed local conditions. Chemical precipitation, in spite of the large amount of work done with it in the past, is being widely tested and experimented with along some new and interesting lines. What the outcome may be no one can say, but that the chemical method of sewage disposal, just as the chemical method of water purification, may not become more popular and be used more generally in those localities where it is applicable is not improbable.

Another use to which chemicals have been more recently put in connection with sewage purification, and which may not be improperly discussed here, is that of a germicide rather than a precipitant. As has been previously said, the necessity of having the effluent from a sewage disposal plant sterile, at least so far as pathogenic organism is concerned, is becoming more and more apparent, and it would seem that such a result could be best and most satisfactorily obtained by the use of certain chemicals.

At present those most frequently employed are either copper sulphate or chlorid of lime, and it would appear from results already obtained that a sterilized effluent can be readily and cheaply obtained by some such means. Of course the application of chemicals as germicides should usually be made after the sewage has been oxidized to a non-putrescible condition by any one of the methods best adapted to the local situation. Experiments have been made with lime, iron sulphate and copper which produced most satisfactory results, but it remains to be seen how general the application of such a method may become. Copper sulphate has likewise been added to sewage before it went on to the filter beds and a great reduction in coli over the untreated sewage resulted. But it would appear that for many reasons the time to add a germicide is after the sewage is oxidized rather than before.

As was plainly pointed out by Mr. Kellerman and myself in discussing the use of copper as an algicide and germicide for water supplies, and somewhat needlessly reiterated by subsequent workers, the effect of large quantities of organic matter on copper is to throw it out of solution and thus greatly reduce its toxic property. For this reason copper hardly seems to be the germicide best suited for use in a sewage effluent. Experiments with calcium hypochlorite have shown that chlorin is not so rapidly affected by the organic matter, and consequently, in hard waters at least, is much more efficient, as well as cheaper.

Independent results obtained by experimenters in different parts of the country and with different kinds of waters indicate that by using chlorid of lime sufficient to give from one to five parts available chlorin at least 99.9 per cent. of the total bacteria in a sewage effluent can be removed and even a higher percentage of fermenting organisms.

The figures for the use of copper sulphate under similar circumstances are not nearly so good, particularly in the west where hard waters are the rule. Under such circumstances it required from five to ten parts per million to remove from 90 to 95 per cent. of the total bacteria, although in the east with soft waters Phelps was able to obtain a reduction of 94 per cent. total organisms and 98.5 of fermenting forms with one part per million of copper at a mean temperature of 50 degrees. Of course as the temperature lowers the efficiency germs gaining entrance to the tympanum have still to do battle with the bactericidal properties of the mucous membrane and its secretion Just how powerful a factor Nature has furnished in this respect is not determined, but reliance is probably placed mainly in the mechanical provisions spoken of Any injury to the lining membrane of the tube or any disease which impairs the function of the cilia of that membrane favors the attacking foe Likewise invasion by a host of bacteria, or by especially virulent micro-organisms, may overcome all protective powers and establish a local disease The propagation and advance of the bacteria may still be checked by the bactericidal action of the vascular membrane, the blood supply throughout the middle ear being, except as regards the ossicles, excellent, and by some further mechanical barriers An example of the latter is the blocking of the aditus ad antrum, or the obliteration of passage-ways between the cellular spaces, by inflammatory swelling of the mucous membrane Possibly such changes not infrequently serve to resist the advance of a purulent inflammation

It must not be supposed that all infections of the middle ear arise from the direct invasion of the tympanum by bacteria from the nasopharynx, that is, the transmission of disease from the nasopharynx to the ear is not always accomplished by its spreading over directly contiguous tissue Some of the irritating secretion may be conveyed from the pharynx to the tympanic cavity by forcible inflation of the tympano-pharyngeal tube as the result of violent postnasal douching, Politzeration, or sneezing, and there are two other possible modes of entrance A perforative injury to the tympanic membrane may afford the means of introducing pyogenic micro-organisms, but this is a rare accident Hematogenous infection of the ear is a process about which we know very little except that it is possible Metastatic abscesses may be formed here as naturally as elsewhere, and the vascular conveyance of germs, or their toxins, as a feature of certain systemic diseases, like measles and scarlet fever, is within the realm of probability In measles the characteristic inflammatory macules have been found on the tympanic mucous membrane coincidently with their appearance in the mouth or nasopharynx, and this could not have been due to extension over the surface In scarlatina, middle-ear complication is much more frequently a sequel to the exanthem, and as it is analogous to the post-scarlatinal nephritis, suggests the probability of its having a similar mode of origin

Among the predisposing factors in suppurative otitis media we must consider the effect of exposure to cold Cold winds blowing on the ear, cold water entering the external canal during the bath, sudden climatic or temperature changes, and various similar agencies are described as playing an active part In many cases there exists an admitted passive factor in the presence of one of the well-recognized secretory diatheses With tuberculosis syphilis or gout as predisposing causes, or with a lowered state of local resistance, any sudden disturbance of the normal vasomotor balance within the tympanum will lead to a secretory form of inflammation of the mucous membrane

Recognizing the important predisposing influence of acute and chronic inflammations of the nasopharynx, and also the generally accepted view of pathologists that there can exist a purulent exudative process without the presence of pyogenic bacteria, or at least without the possibility of demonstrating their presence, it is necessary, nevertheless, to remember that such micro-organisms can be found in the secretions of the vast majority of all the patients with suppurative otitis media examined, and it would be well in consequence of this to look on every case of purulent otitis as bacterial in origin Repeated attacks of rhinitis, pharyngitis or tonsillitis, or the existence of abnormal tissue developments in the nose or throat, with their attendant conditions of persistent congestion of the tympano-pharyngeal tube and the tympanum, are favorable to an infection of the middle ear Just the conditions most conducive to the growth and activity of bacteria are obtained in this way, lowered resistance of the tissue cells and a serous pabulum in a protected chamber that is heated to the proper degree of temperature There lurk in the throats of all persons one or more varieties of micro-organisms which are capable of doing damage whenever the other conditions requisite to bacterial infections are provided One of the organisms most frequently discovered in this inactive state is the diplococcus of pneumonia, and it is worthy of note that this particular organism is the one most frequently isolated from the excretions of acute suppurative otitis media

The micro-organisms that have been found in the pus from cases of suppurative middle-ear disease, and which have been considered as the cause of the condition, are almost innumerable Most prominent in a list of such bacteria would be the following *Diplococcus pneumoniæ Streptococcus pyogenes, Staphylococcus pyogenes* (*albus* and *aureus*), *Bacillus pneumoniæ* (Friedlander), *B diphtheriæ, B tuberculosis, B influenzæ* and *pseudo-influenzæ, B pyogenes fœtidus* and *B coli communis* In acute suppurative cases the pneumococcus is isolated in pure culture much more frequently than any other organism, the streptococcus filling the second place in order of frequency and the staphylococci the third In chronic otorrhea a pure culture of a single organism is seldom obtained, a mixed infection is the rule and the predominant germ is the staphylococcus Such organisms as the pneumococcus and the influenza bacillus, which may have occasioned the acute outbreak, soon die out or are displaced by the secondary invasion of more robust microbes

Whatever the morbific excitant to inflammation may be, there is always a condition of local tissue degeneration, followed by alteration in the circulation and by exudation The first effect of a localized tissue injury is an active hyperemia of the part, on account of the dilatation of the lumen of its blood vessels, and this particular dilatation may be the result of either stimulation of the vasodilators or paralysis of the vasoconstrictors With the increase in caliber of the vessels there is a coincident slowing of the blood current and the commencement of a pathologic exudate, as the flow diminishes in speed the solid elements of the blood, in compliance with physical laws, must leave the center of the stream and accumulate at its periphery, that is, along the walls of the blood vessels, and as these vessel walls have at the same time become changed in structure, so as to show an increased permeability, the active corpuscular elements, together with red blood corpuscles and the serous fluid, pass out through the cell interstices These migratory white blood corpuscles, chiefly the polynuclear forms of leucocytes, the red blood corpuscles, the extravasated serum, and the degenerated and desquamated tissue cells, constitute the inflammatory exudate

When pus-producing bacteria are at work there are especial and characteristic differences in the manufacture of the exudate from that observed in a simple irritative inflammation. Pus cells accumulate in great numbers, and instead of the deposition of fibrin, there is a tendency to liquefaction of the exudate and of the necrotic tissue, through the solvent action of the pyogenic germs. As the result of chemotaxis the leucocytes leave the blood vessels of the inflamed area to meet the invading bacterial poisons. In the ensuing struggle the leucocyte attempts to engulf and digest the microbe, and restoration to health depends largely on the ability of the host to furnish a sufficient number of these active guardsmen to overcome the invading pathogenic army. Especially virulent micro-organisms, or a too numerous collection of less dangerous ones, may rapidly destroy a mass of white cells, and it is this débris of the battle that constitutes the pus of purulent affections, the tissue cells may also take on the phagocytic action of the leucocytes. Under the microscope this yellowish white exudate is seen to consist of serum, leucocytes, often containing bacteria within their substance, and the degeneration products of dead leucocytes and tissue cells.

With the destruction of the epithelium and superficial portions of the mucous membrane a condition known as ulceration is produced, and this is probably constantly associated with suppurative otitis media, the only exception might be in the few cases of acute inflammation, of very short duration, in which the slight amount of pus that is formed makes its exit through the tympano-pharyngeal tube, or in which the active seat of purulent inflammation is rapidly transferred from the tympanum to the mastoid cells without preceding erosion of the tympanic membrane. The extent of the ulcer must vary considerably, involving in some instances but a small point on the covering of one of the ossicles, or on some part of the lining of the tympanic walls, in other cases extending over a comparatively large area of these tissues. Furthermore, the depth to which this loss of cellular substance or tissue necrosis extends in the tympanum is a matter for particular consideration. At no point is the mucous membrane covering the tympanic walls very thick, and over some portion of the ossicles it is no more than an epithelial coat over a single layer of cells that serves as a periosteum, with an insignificant amount of fibrous substance between them. Some of these thinly-covered spaces, particularly on the incus, are also especially prone to necrosis because of their poor nutrition under normal conditions—due to a limited blood supply. When deprived of the protection of its periosteal coat the bone readily succumbs to the destroyer, and necrosis of the ossicles is a common feature of prolonged suppurative tympanic inflammation.

More frequent still is the ulceration or erosion of the membrana vibrans. This portion of the external wall of the tympanum is the weakest of all and the only one that can give way before the pressure of an accumulating exudate. With the formation of any considerable amount of pus within the tympanum the intratympanic pressure on this membrane gradually increases, and as it becomes greater than the external air pressure a bulging outward of some portion of the membrane follows. Diminution of the pressure through the escape of excretions by way of the tympano-pharyngeal tube is sometimes possible, but is generally prevented by the blocking of this channel incident to swelling of its lining mucous membrane. In consequence of decreased viability of that portion of the membrane subjected to the greatest pressure from within, rendering it more liable to ulcerative perforation, spontaneous rupture of the weakened area takes place, and through this perforation the pus exudes into the external auditory canal.

With the occurrence of spontaneous perforation of the membrane, or the establishment of drainage by incision of that structure, the inflammation usually subsides, the purulent secretions flow away as rapidly as they are formed, the patient rallies sufficient forces to destroy the bacteria, and a process of repair begins. In many cases, however, this desirable result does not follow. Owing to a debilitated system, to anatomic conditions favoring the retention of purulent secretions, or to virulence of the attacking micro-organism, the suppuration continues and a chronic otorrhea is the result. A long-continued process of this sort destroys the mucous membrane and may cause necrosis of the ossicles or the bony walls of the tympanum and its communicating cavities.

Could a suppurative inflammation of the middle ear always be confined to the mucous membrane lining the tympanum, or even to the involvement of the ossicles, the disease would have no mortality and would be of interest prognostically only from the point of estimating the possible impairment of function of the sound-transmitting apparatus of the organ of hearing. Surrounded as the tympanum is, however, by organs and structures more important to life, the problem, when an inflammation breaks through the tympanic bounds, becomes a far more serious one than that concerned in the effect it may have on the hearing power. When suppurative otitis media starts on a destructive tour it may invade the mastoid process and, by an extension in one of several directions, produce mastoiditis, lateral sinus thrombosis, extradural abscess, meningitis, or cervical cerebral or cerebellar abscess. It may perforate the internal wall of the tympanum and set up a purulent labyrinthitis, with the possibility of extension to the cerebral cavity through the internal auditory canal, it may erode the bony sheath of the facial nerve and cause paralysis of the muscles supplied by that nerve, or, through the medium of the lymphatic or venous channels, it may cause a systemic infection.

The regenerative processes observed in suppurative otitis media are extremely interesting. Wherever suppuration has taken place there is a loss of substance, and a more extensive process of repair is required to produce healing and to fill up the wound. The great destruction of tissue in the severe and chronic cases usually implies the impossibility of reparation. Small perforations of the tympanic membrane may become entirely healed, indeed, an entire new membrane may be formed, but such replacement is always by tissue which is histologically different from that destroyed, these new membranes being constructed mainly from outgrowths of the dermoid and mucous coats. Partially destroyed ossicles are never again made whole and the necrotic spots in the tympanic walls are rarely filled up by new osseous tissue. In the new-formed tissue that closes a perforation of the tympanic membrane and in the unabsorbed fibrous deposits on this membrane, calcareous concretions often appear from the deposit therein of lime salts.

As the result of Nature's effort to supply new structures to replace those removed by suppuration two serious complications of otitis media are possible. Granulation tissue, springing from some ulcerative point may readily assume the nature of a polypoid growth, and these polyps when exuberant, by pressure on neighboring structures, or by favoring the retention of unhealthy excretions, add to the seriousness and chronicity of the original disease The second complication referred to is the occurrence of cholesteatomatous accumulations Wandering epithelial cells, or the hyperplasia of cells from the dermal layer of the membrane, at the margin of perforation, or from ulcerative areas in the lining of the tympanum, lead to the development of cholesteatoma through the excessive growth of these misplaced cells Occasionally they accrete into a tumor-like mass, producing increased damage by erosion of the surrounding tissue

DISCUSSION

Dr J F Barnhill, Indianapolis, said that he was glad that Dr Reik takes the position that we should regard the middle ear as a series of cavities rather than as one cavity, namely, the tympanum, which latter has so long been described as synonymous with the term middle ear At present when we speak of the middle ear the profession understands that we mean only the little cavity in which the ossicles are found In order that a better understanding of the causation, pathology and treatment of aural affections may be obtained, it becomes necessary that the true significance of the term "middle ear" should become better understood It seems to him, therefore, that the Eustachian tube, tympanic cavity, mastoid antrum and mastoid cells should all be considered as integral parts of the middle ear He thinks that, in middle ear inflammation, the chief predisposing cause lies in the nasopharynx, and very often in the adenoid hypertrophy so frequent in children It is his very positive belief that fully 75 per cent of all the early inflammatory aural affections begin with the above factor as a predisposing cause In addition to this, are the various diatheses which lower the individual resistance He thinks that the chief exciting cause is the pathologic bacteria nearly always present in the nasopharynx, which often find their way from the latter cavity into the middle ear As to the method by which these germs reach the middle ear, there may be some difference of opinion Dr Reik states that they may migrate from the throat to the ear of their own accord, and that they may also be driven into the tympanic cavity by various fluids used as nasal shes, or by blowing the nose Dr Barnhill believes this latter method of germ entrance into the middle ear has not been accentuated as it should be, he believes that blowing the partly occluded nose has very much to do with the beginning of many of the acute forms of middle ear inflammation The truth of this statement can be readily understood if it is remembered that in the largest percentage, perhaps, of all cases in which middle ear inflammation arises, there is a certain amount of stoppage of the nose or nasopharynx, and that therefore a powerful blast of the nose in the effort to clear it will undoubtedly drive great numbers of bacteria into this system of cavities which we have called the middle ear It is the duty, in his opinion, of those who have charge of cases of measles scarlet fever or other affection in which the nose and nasopharynx are involved, to warn the individual against frequent and forcible efforts at blowing the nose

Dr Barnhill does not agree with the essayist's opinion that closure of the Eustachian tube by swelling may prove a means of blocking the entrance of bacteria to these aural cavities, and that such swelling is therefore the means of avoiding serious results from the entrance of bacteria Dr Barnhill has always taken the opposite view, that the blocking of the Eustachian tube by swelling, after the germs have been forcibly blown from the nose into the tympanum, is one of the most certain reasons for the establishment and persistence of the inflammatory state in the middle ear This is known to be true largely by analogy For example the cavities of the head, or of the body anywhere, are usually free from severe inflammation so long as they have open and ample drainage Take the urinary bladder, for instance, so long as it is drained well through the urethra, there is no inflammation, but should it become even partially blocked by an enlarged prostate, cystitis and sometimes suppuration arise Should the antrum of Highmore become blocked by an enlarged turbinate, bacterial retention and inflammation immediately follow, and similarly it may be reasoned by analogy that when the Eustachian orifice or any part of the Eustachian tube is occluded, or any portion of the mastoid cells is blocked and therefore badly drained, the inevitable result is retention of bacteria and secretion, and subsequent inflammation Dr Barnhill expressed the opinion that Dr Reik did not dwell as much as he should on the anatomic structure of the attic Several authors have pointed out, and Dr Dench has particularly done so in all his writings on this subject, that the attic contains the folds of the middle ear, and it is these that are capable of the greatest swelling Dr Barnhill believes the pressure due to the immensely swollen mucous membrane which forms these folds—a frequent occurience in the attic as a result of an inflammatory state of the middle ear, is as much responsible for the serious ulceration and necrosis which often take place in the tympanic structures, as are the bacteria themselves The same may be said of other parts of the ear, but the statement is particularly true of those parts containing much connective tissue, as in the upper part of the middle ear

Dr Frank Allport, Chicago, expressed the opinion that perhaps we do not pay as much attention to the leucocyte count as we should His attention was called to the matter more particularly by a very interesting article by Dr McKernon of New York on the leucocyte count in acute inflammations of the middle ear and also of the mastoid Dr Allport thinks that we ought to grasp clearly at least the salient and significant points in regard to the leucocyte count because while of course we can not depend on it absolutely to indicate just what is going on and what our attitude should be with regard to treatment or operation, notwithstanding it is a valuable guide post for us, provided we understand what the normal count should be, and what the variations signify For instance, a normal leucocyte count amounts to about 8,000 by measurement This, of course, varies, some authors regarding 6,500 as the normal count, and from that all the way up to 9,000 It must not be forgotten that the leucocyte count varies under ordinary conditions After eating, the leucocyte count is, of course, higher than under ordinary circumstances The higher the leucocyte count the more it indicates two points, inflammation and body resistance Then the differential count should not be forgotten with special reference to the polymorphonuclear cells as regards their percentage Again, authorities differ with regard to the normal percentage of the polymorphonuclear cells, some claim that about 60 per cent is a fairly normal average and others that 65 or 70 per cent would more clearly and closely indicate the normal percentage However this may be, of course the higher the polymorphonuclear percentage the more the presence of sepsis and pus is indicated For instance, as pointed out by McKernon, a high general leucocyte count will indicate a high degree of inflammation with good body resistance If the leucocyte count ran up to 25,000 or 30 000 or more, it would indicate a reasonably high degree of inflammation with good resistance If the polymorphonuclear count runs up also to a high percentage, to 75, 80 or 95 per cent, or even more, it indicates the presence of sepsis and pus In other words a high general leucocyte count with a high percentage polymorphonuclear count would indicate good resistance with a good deal of sepsis and pus, and a high polymorphonuclear count with a low degree general leucocyte count would indicate a high degree of sepsis and pus with a low degree of resistance, and a low general leucocyte count with low polymorphonuclear count would indicate that the patient was not in bad condition, or at least was improving Of course, these features one can not depend on, they are simply guide posts that help to a diagnosis and a line of treatment

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Treatment by the Unfit.—The placing of one's body and mind in the hands of a man ignorant of what is already known of their structure and physiology is exactly comparable to asking the butcher to give a legal opinion, or the furnace man to prepare the architectural plans for a new house Where good property and good money are concerned, people are not such fools as to run risks—*Montreal Medical Journal*

Special Article

FOURTH OF JULY INJURIES AND TETANUS

For the fifth consecutive year The Journal publishes statistics regarding injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries There were 73 tetanus cases this year, or 16 less than in 1906, 31 less than in 1905, 32 less than in 1904 and 342 less than in 1903 There has been a constant decrease since we began to publish these statistics It is interesting, if not significant, to note the corresponding decrease in the number of injuries due to blank cartridges (see Table 5)

In the preparation of these statistics the same methods have been employed as heretofore in order that any comparisons may be drawn fairly The list of tetanus cases is as follows

TABLE 1

Name.	Age.	Cause of Wound	Site of Wound.	Duration in days	Result
		ARIZONA			
Daun	40	Gunshot	Leg	12	D
		CALIFORNIA			
Birmess	26	Gunshot		10	D
		CONNECTICUT			
Jordan	12	Blank cartridge.	Hand		
Zacharlesen	11	Blank cartridge	Hand.	14	D
Parshall	25	Blank cartridge	Finger	16	D
Terney		Blank cartridge.	Hand	7	D
		DELAWARE.			
Myers R	11	Firecracker	Hand.	9	D
		GEORGIA			
Hulsey	13	Blank cartridge	Hand.	12	D
		ILLINOIS			
Driver	15	Blank cartridge	Hand	10	D
Margworth	8	Blank cartridge.	Hand	10	D
Mason	14	Blank cartridge	Hand	8	D
Pietron	25	Gunshot	Hand	9	D
Williams	14	Blank cartridge	Hand	10	D
Langfeld	15	Gunshot.	Hand	9	D
Mehringer	12	Blank cartridge.	Hand.	7	D
Hotchkiss	12	Blank cartridge.	Hand	8	D
Davis	10	Fireworks.	Hand	9	D
Faulkner	13	Blank cartridge	Hand	11	D
Foor	12	Blank cartridge.	Hand	11	D.
Gant	10	Blank cartridge.	Hand	15	D
		INDIANA.			
Flowers	12	Blank cartridge	Hand	6	D
Hurtsell	11	Firecracker		7	D
		IOWA.			
Morrison	13	Blank cartridge.	Hand.	17	D
Fritz	9	Blank cartridge.	Mouth	12	D
Woodmansee	21	Cannon	Hand	9	D
Kaschewski	12	Blank cartridge.	Hand	12	D
		KANSAS			
Ryan	10	Firecracker	Leg	10	D
Swetlick	16	Cannon.		9	D
		MASSACHUSETTS			
Moran	18	Cannon	Hip	12	D
Johnson		Cannon	Arm	14	D
		MICHIGAN			
Harn	Adult	Blank cartridge.	Hand.		
Beck	9	Firecracker	Hand	12	D
Kowalski		Blank cartridge.	Hand	6	D
Summers	14	Blank cartridge	Hand	5	D
		MINNESOTA.			
Johnson	16	Blank cartridge.	Hand	6	D
Janda	12	Blank cartridge	Finger		
		MISSOURI			
Lavalat	12	Blank cartridge.	Hand.		
		MONTANA.			
Dunleavy	16	Blank cartridge.	Hand.	6	D
		NEW JERSEY			
Driece	17	Powder	Face		
Shryver	45	Giant cracker	Hand	14	D
Griffin	12	Blank cartridge	Hand.		
Burke	15	Cannon.	Hand.	13	D
Illewski	20	Blank cartridge	Hand.	80	R.
Marino	14	Blank cartridge.	Hand.	7	D
Calloway	20	Blank cartridge.	Face	13	D
Meyer L.	11	Blank cartridge	Hand.	9	D
		NEW YORK			
Abbey	11	Blank cartridge.			
Baumeister		Giant cracker	Thumb	9	D
Wilder	13	Blank cartridge.	Hand.	9	D
Moran	16	Cannon	Hip	12	D
		OHIO			
Picone	11	Blank cartridge	Hand	9	D
Moses	Adult	Giant cracker	Hand		
Davis	65	Giant cracker	Hand	13	D
Justice	13	Blank cartridge	Hand	7	D
Maus	18	Blank cartridge	Hand	8	D
Sonnenberg		Blank cartridge	Hand	12	D
		OREGON			
Sauer	15	Blank cartridge	Hand	8	D
		PENNSYLVANIA			
Frost	11	Blank cartridge		9	D
Burkhardt	45	Blank cartridge	Leg	6	D
Mintzner	41	Blank cartridge	Hand	9	D
Wilde	22	Blank cartridge	Hand	24	D
Martin	21	Blank cartridge	Hand	8	D
Matthews	6	Powder	Foot	30	R
Shonk	13	Blank cartridge	Hand	8	D
		TEXAS			
Quick	12	Blank cartridge	Hand		
Amman	28	Blank cartridge			D
		VERMONT			
Towne	19	Blank cartridge	Hand	10	D
Campbell	17	Blank cartridge	Hand	11	D
		WASHINGTON			
Hemphill	13	Blank cartridge	Hand	7	D
Michaelson	12	Blank cartridge	Hand	9	D
		WISCONSIN			
Witt	13	Blank cartridge	Hand.	7	D
Burke	10	Blank cartridge	Hand	9	D
Popp	11	Blank cartridge	Hand	11	D

Tetanus cases occurred in 23 different states, or in two less than last year, but in the same number of states as in 1905 Tetanus occurred in 21 states in 1904 and in 30 states in 1903 Illinois had the largest number this year, 12 cases being reported New Jersey comes next, with 8 cases, Pennsylvania comes third with 7 cases and Ohio fourth with 6 cases Nine states have more cases this year than last, and six states have the same number as last year Connecticut had 4 this year where it had none last year, and Pennsylvania had 2 more cases than in 1906 Table 2 gives a comparison of the number of cases in each state for the five years

TABLE 2

	1903	1904	1905	1906	1907
Alabama			1		
Arizona					1
California	2	4	4	3	1
Colorado	4		1		
Connecticut	3		3		4
Delaware			1	1	1
District of Columbia	1				
Florida					
Georgia					1
Idaho	1				
Illinois	40	15	20	10	12
Indiana	11	6	3	8	2
Indian Territory	1				
Iowa	14	2	3	4	4
Kansas	11	1			2
Kentucky	4	2		1	
Louisiana					
Maine	2	4	1	1	
Maryland	1		1	1	
Massachusetts	16	5	7		2
Michigan	29	7	9	4	4
Minnesota	15	2	2	2	2
Missouri	29	1	8	8	1
Montana	2	1	1		1
Nebraska	4	3	3	1	
New Hampshire	2			1	
New Jersey	8	9	3	10	8
New York	36	9	6	8	4
North Dakota					
Ohio	67	9	5	7	6
Oklahoma			1	1	
Oregon	2			1	1
Pennsylvania	82	17	12	5	7
Rhode Island	[illegible]			1	
South Carolina					
South Dakota					
Tennessee					
Texas					2
Utah		1	1		
Vermont	3	2		2	2
Washington	2	1			2
West Virginia	3			2	
Wisconsin	10	4	13	2	3
Wyoming				1	
Total	415	105	104	89	73
No states having cases	30	21	23	25	23

Blank cartridges are still responsible for the great majority of cases, 52, or 71 per cent of all cases this

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

State.	Deaths			Injuries						Total Persons Dead or Injured	Causes of Tetanus Cases		Causes of All Cases Aside from Tetanus Cases				
	From Tetanus.	*From Other Causes*	*Total*	*Loss of Sight.*	*Loss of One Eye*	*Loss of Legs, Arms or Hands*	*Loss of Fingers, One or More*	*Other Injuries*	*Total Non-fatal Injuries*		*Blank Cartridge*	*All Other Causes*	*Blank Cartridge*	*Fire Crackers*	*Cannon*	*Firearms*	*Powder and Fireworks.*
Alabama								1	1	1							1
Arizona	1		1					1	1	2		1					1
Arkansas																	
California	1	3	4		3		11	103	117	121		1	4	46	8	6	56
Colorado						3		22	25	25			3	5	3	4	10
Connecticut	3	3	6		1	1	5	50	57	63	4		8	26	6	5	14
Delaware	1		1					15	15	16		1		9	1		5
District of Columbia							1	11	12	12				10		1	1
Florida																	
Georgia	1		1					1	1	2	1						1
Idaho		1	1					3	3	4							4
Illinois	12	17	29		11	4	28	396	439	468	9	3	75	176	28	52	125
Indiana	2	5	7	2	3	4	10	157	176	183	1	1	13	75	19	14	60
Indian Territory																	
Iowa	4	5	9	1	3	2	12	204	222	231	3	1	15	102	7	4	99
Kansas	2	2	4	1		1	1	57	60	64		2	10	28	5	3	16
Kentucky							2	16	18	18			5	4	1	4	4
Louisiana								8	8	8			2	1		3	2
Maine		2	2		1		1	7	9	11			2	6		3	
Maryland		1	1		1	2	1	18	22	23			2	10	1	1	9
Massachusetts	2	3	5		4	1	9	149	163	168		2	16	51	11	6	79
Michigan	3	3	6	2	7	5	13	130	157	163	3	1	3	75	15	10	56
Minnesota	1		1		3	3	3	85	94	95	2		4	57	1	10	21
Mississippi		2	2							2							2
Missouri		5	5		3	2	14	275	294	299	1		84	83	5	30	96
Montana	1		1		1		1	3	5	6	1			3			2
Nebraska				1	2		2	53	58	58			3	19	1	7	28
Nevada								1	1	1							1
New Hampshire							3	10	13	13				5		2	6
New Jersey	5	1	6		6	6	24	360	396	402	5	3	69	135	33	46	106
New Mexico		1	1				2	3	5	6				2	1	3	
New York	3	21	24		6	10	31	678	728	752	2	2	152	172	39	172	213
North Carolina																	
North Dakota		1	1	1		1		5	7	8				7			1
Ohio	5	6	11	2	7	5	23	327	364	375	4	2	35	140	31	35	123
Oklahoma								11	11	11			4	6			1
Oregon	1	2	3					2	2	5	1			2		1	1
Pennsylvania	6	13	19	2	5	4	17	444	472	491	6	1	19	120	17	53	266
Rhode Island							2	37	39	39			5	13	3	6	12
South Carolina																	
South Dakota		1	1					7	7	8			1	3		4	
Tennessee					1		1	4	4							2	2
Texas	1		1					6	6	7	2				1	1	3
Utah							3	27	30	30			7	9	3	5	6
Vermont	2		2					16	16	18	2		3	8	1	1	3
Virginia																	
Washington	2	4	6			1	2	14	17	23	2		3	13		2	3
West Virginia					2	1	4	20	27	27			1	15	5		6
Wisconsin	3		3		5	1	8	133	147	150	3		6	41	16	6	78
Wyoming																	
1907 totals	62	102	164	12	75	57	237	3868	4240	4413	52	21	554	1489	207	503	1528
1906 totals	75	83	158	22	72	56	227	4931	5308	5466	54	35	925	1690	408	532	1823
1905 totals	87	95	182	25	106	80	221	4562	4994	5176	65	30	744	1775	474	401	1675
1904 totals	91	92	183	19	61	61	203	3637	3986	4169	74	25	931	1263	503	406	1056
1903 totals	406	60	466	10	75	54	174	3670	3983	4449	363	29	1300	1152	397	236	731

TABLE 6.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING FIVE YEARS

	1903	1904	1905	1906	1907		1903	1904	1905	1906	1907
Alabama	2	7	1	2	1	Montana	5	17	40	3	6
Arizona	1		4	5	2	Nebraska	46	63	43	47	58
Arkansas			3	4		Nevada		1	2		1
California	100	133	142	96	121	New Hampshire	27	23	9	29	13
Colorado	39	44	26	23	25	New Jersey	225	204	250	393	402
Connecticut	167	133	172	160	63	New Mexico		4	5	1	6
Delaware	1	5	14	8	16	New York	592	519	596	631	752
District of Columbia	2	10	24	5	12	North Carolina			1	1	
Florida	1	2	2			North Dakota	10	9	29	11	8
Georgia				4	2	Ohio	411	327	329	409	375
Idaho	4	4	3	3	4	Oklahoma		3	7	12	11
Illinois	367	423	512	508	463	Oregon	16	11	9	11	5
Indian Territory	1			2	183	Pennsylvania	523	744	721	979	491
Indiana	160	211	217	250		Rhode Island	41	30	11	21	39
Iowa	163	137	328	255	231	South Carolina				1	
Kansas	63	58	51	61	64	South Dakota	4	10	15	5	8
Kentucky	30	72	17	21	18	Tennessee	4	1	5	6	4
Louisiana		2	3	7	8	Texas	2	2	4	11	7
Maine	91	32	29	15	11	Utah	27	27	25	13	30
Maryland	21	22	13	10	23	Vermont	45	14	10	14	18
Massachusetts	637	193	467	[illegible]	168	Virginia		11	5	8	
Michigan	144	157	258	191	163	Washington	21	27	15	25	23
Minnesota	157	102	174	95	95	West Virginia	19	16	21	61	27
Mississippi				2	2	Wisconsin	199	215	270	155	150
Missouri	117	84	218	375	299	Wyoming	1	2	8	3	

year being due to that cause, as compared with 60 per cent. last year. Giant crackers caused only 8 cases this year, compared with 17 last year, and toy cannon caused 6 cases this year where they only caused 1 case last year. Table 3 gives a comparison of the causes of tetanus cases for the five years.

TABLE 3.—Causes of Tetanus Cases

	Blank cartridge	Giant cracker	Cannon	Firearms	Powder etc.	Total
1903	363	17	5	3	27	415
1904	74	18	5	1	7	105
1905	65	17	4	5	13	104
1906	54	17	1	7	10	89
1907	52	8	6	4	3	73

Besides the cases of lockjaw due directly to Fourth of July injuries, an unusually large number of other cases were reported this year, these being due to penetrating wounds from nails or splinters and to crushing injuries. There were 94 such cases reported this year as compared with 60 last year and 32 in 1905. Notwithstanding the increase in the number of these cases, the number from Fourth of July injuries has decreased. This would seem to indicate that Fourth of July injuries may have been better attended to than other injuries. The next thought would naturally be that all penetrating wounds, regardless of their cause, should have like treatment.

Besides the deaths due to tetanus, there were 102 persons who lost their lives this year because of the present idiotic method of celebrating the Fourth of July. The total number of deaths this year, therefore including tetanus, was 164, or 6 more than last year. The annual slaughter still continues, although tetanus is becoming a less potent factor. Of the 102 deaths aside from tetanus, gunshot wounds caused 20, giant crackers caused 13, and 13 deaths were due to explosions of powder, torpedoes and dynamite. Ten deaths were due to falls or runaways caused by firecrackers. One person was drowned because a "practical joker" threw a giant cracker into a boat crowded with young people. The extremity of tolerance is reached, however, when we know that 31 persons were burned to death, the majority of these being young girls and children, whose dresses so easily catch fire. One hundred and sixty-four lives were sacrificed, therefore, in the celebration of our Nation's independence!

As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Accidents which occurred in regular occupations and gunshot wounds received in brawls have likewise been omitted.

The following table shows a comparison of the causes of death other than from tetanus for the past three years.

TABLE 4.—Causes of Deaths Not Due to Tetanus

Year	Gunshot	Fire from fireworks	Powder, torpedoes, etc.	Giant crackers	Cannon	Runaways and falls	Other causes	Total
1905	37	23	6	5	7	4	13	95
1906	38	18	18	3	3	2	1	83
1907	20	31	13	13	3	10	12	102

In Table 5 will be found a summary of all injuries, including tetanus, as well as of all causes. The arrangement is by states, as heretofore, so that comparisons may be made. Beneath the totals at the bottom of the table the totals for the four previous years have been inserted for comparison. Table 6 is arranged to show a more ready comparison by states of the total accidents and deaths for the five years.

New York takes the lead this year with 752 casualties, Pennsylvania taking second place with 491. Illinois had 468 and New Jersey had 402. Altogether there were 4,413 accidents this year as compared with 5,466 last year, a decrease of 1,053.

There were 4,249 non-fatal injuries, a decrease of 1,059 below last year, when the total was 5,308. Only 12 persons were completely blinded this year, or 10 less than last year; 75 people lost one eye this year, or 3 more than last year, but 31 less than in 1905; 57 lost an arm or a hand this year, or one more than last year, and 237 persons lost one or more fingers this year, this being 10 more than last year.

The principal cause of the most mutilating wounds is by far the giant cracker. This destructive means of celebration, along with the toy pistol, should be condemned. This year 1,489 injuries, including 13 deaths and 8 cases of lockjaw, were due to the giant cracker. Firearms rank second in causing mutilating wounds, being responsible for 502 injuries and 24 deaths, including 4 cases of tetanus. Blank cartridge wounds, as a rule, are not mutilating, but for that very reason are the more dangerous, since they are more often neglected. In a certain medium-sized city, men and boys were seen to shoot deliberately at each other on the street at close range. Such reckless use of the blank cartridge pistol is appalling to one who realizes the danger lurking in the slight wounds caused by them.

If the injuries caused by firearms, by the giant cracker and by the blank cartridge pistols were limited to the individuals who use them, there would seem less reason to complain. But a large percentage of the sufferers are people who prefer other means of celebration. On the Fourth of July no crowd of people is safe from the senseless "joker" with his giant cracker. No person walking on the street is safe from the stray bullet from the revolver of some irresponsible hoodlum. A considerable number of injuries resulting in several cases of tetanus and in a few deaths were inflicted by others on persons who were engaged in more enlightened methods of enjoying their holiday.

The total results of our last "jolly celebration" of Independence Day were 164 killed and 4,249 injured, many of these being maimed for life!—Is this method of celebration really worth while?

Hygiene of the Napkin.—Dr. Szekely, in the *Klinisch-Therapeutische Wochschr.*, says that in the sanatorium at Stadtwald the question of the transmission of tuberculosis by napkins and the means for its prevention have been the subject of an investigation by Dr. E. Huhs, the resident physician. Examination of the linen closet in which the napkins had been kept for years showed absence of tubercle bacilli, but a culture from the inside of napkin rings revealed the presence of a virulent bacilli. The most suitable envelope for napkins is the folded linen recommended by Kirchener, which is dipped in a disinfectant solution before it is sent to the wash. In the sanatorium at Stadtwald each patient after eating places his folded napkin in a linen case, which is placed in its proper ring. The ring and holder bear the number of the bed which the patient occupies. Each week the used napkins with their cases are placed in a disinfectant solution by which complete freedom from germs is secured. The disinfection is followed by ordinary laundering. In this way both the esthetic and hygienic requirements are fully met.

Clinical Notes

PHYSICIANS' ACCOUNTS AND RECORDS

G W MOOREHOUSE, M.D
CLEVELAND, OHIO

That all physicians should, and that relatively few physicians do, keep clinical records of their cases is a statement that needs only to be made to be accepted Of those who have no records, some seem perfectly satisfied with what they can remember, but many recognize that the absence of clinical memoranda is a deplorable fact, and are groping for some system adapted to their needs

By many, cards are thought to afford the ultimate solution of the problem, and either cards or books serve very well for office records, when wanted away from the office, however, they are rarely at hand In family practice, after an extended trial, they proved so ill-adapted to my personal needs that the suggestions here given were worked out, adopting freely whatever appealed to me in other systems

The whole system depends on a clinical blank which combines a record of charges, credits and clinical notes, one sheet being used for each visit By the necessity of making a change in order to keep up one s professional accounts it was thought that a distinct stimulus would be afforded to the keeping of clinical memoranda as well, and testimony to the correctness of this supposition has been afforded by their use, the most satisfactory results being secured when the records are made at the time of the visit

The necessary supplies for the system, including a card ledger, are as follows

1 Cards, 10 by 15 cm ledger rulings

2 Guides Four sets of A to Z guides

3 Folders Sheets of tough but not especially stiff or bulky paper, 19 by 15 cm in size, ruled on one side, first line 1 cm from top of sheet, other lines about 6 to 7 mm apart, one-fourth inch or a little more according to individual habits in writing This sheet is to be folded to 10 by 15 cm, with rulings inside so that the bottom of the sheet reaches the top line Both sides may be ruled if desired One such sheet is needed for each individual patient

4 Prescription blanks in pads of 50, if made to order they should be of the same size as the clinical blanks, they should not be larger

5 Clinical blanks in pads of 50 size 9 by 15 cm One of these is used for each service or payment

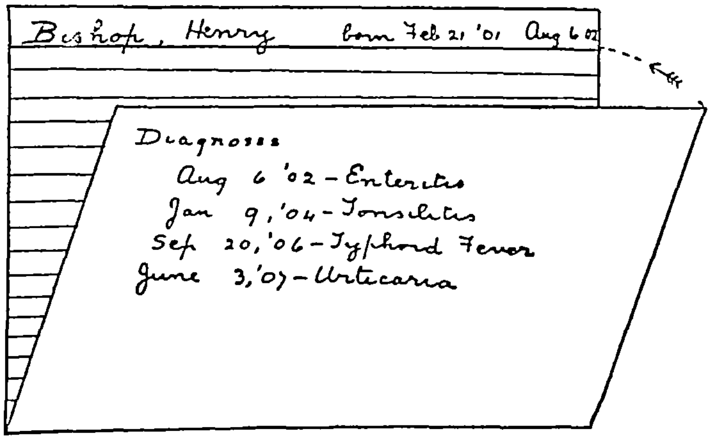
6 One cover to hold one pad, each, of prescription and clinical blanks

The heading of the clinical blank is reproduced below

NAME DATE
House Office Med Exam Oper Dress Obst Cons Vacc Night
CHARGE PAYMENT
Patient s Residence
Charge to
Residence
CLINICAL NOTES AND TREATMENT
Hour T I R
[Here follow thirteen blank lines]

Since the great difficulty in private records has never been in providing for extensive notes but, on the contrary, in getting any notes at all, I will first indicate the slightest use that can be made of the blank and the labor this involves The first three lines of the blank must be used On the first line the name of the patient is entered and the date, on the second a check mark through, or a circle around, the appropriate word or words, indicates the character of the service, on the third the charge to be made is entered, and the payment, if cash has been received Credit on account without service at the time is similarly indicated by entry of name, date and amount received The patient's residence, the one against whom the charge is to be made and his residence need rarely be indicated on these blanks, though it seemed necessary to assign a definite space to them

The further value of the blank consists in the opportunity it affords to record symptoms, physical signs and treatment I realize that not every one can compel himself to keep up clinical records, but the ready opportunity which these blanks constantly present to one should stimulate such records to the utmost In the further use of the clinical blank the symptoms of the patient and the physical signs he presents having been entered, the treatment is indicated briefly but completely Following this outline the patient's treatment is laid down (a) by advice as to regimen, etc, (b) by medicines dispensed and (c) by prescriptions written It is not infrequently suggested that a record of treatment be preserved in the form of carbon copies of prescriptions This is not here advised, for two reasons Prescriptions, even to one who dispenses no medicine, constitute only a part of the treatment, and carbons are not easy to manage, getting lost and misplaced, soiling paper and hands



Prepared for work one has one pad of clinical blanks and one of prescription blanks in a single cover The clinical blanks are not removed from the pad, one after another being used to record successive services rendered A rubber band indicating the next blank to be used is a convenience

Whether the card ledger is used or not a size corresponding to that of standard cards should be chosen for the sake of economy One standard size is that suggested here, 10 by 15 cm Another standard size is 4 by 6 inches This card is a trifle larger than the former and either is about as large as can be conveniently carried Other standard sizes are 7.5 by 12 5 and 3 by 5 inches, but clinical blanks and prescription blanks to correspond to these seem too small unless for the use of people writing a very small hand

When it is desirable to post, take all filled pads that have been laid aside and tear out the blanks Tear out, also from the pad in current use to the proper date

Arrange the slips by name to correspond to the alphabetical arrangement of the ledger cards This will make the posting much more expeditious If any record is desired of total income, total charges, etc, before posting is the best time to make it

Now post to ledger cards or by whatever method is used, including or not, as desired, any cash business that may have been done There is a certain amount of work not cash to which it may not be necessary to give a ledger card, the slip or slips corresponding to this work may be placed in the folder as in filing case histories, and kept among the ledger cards until paid

Once posted, the clinical blanks for services rendered are filed as case histories Those showing only a record of payment on account I have thought it best to preserve as well So far they have been kept together in a folder in chronologic order with the ledger cards

The folder with the name of the individual, written on the top line, and containing whatever clinical blanks have accumulated, constitute what is known as the vertical system of filing It, however, may well be used for an additional purpose, and that is as a means of recording the general medical history of the individual, name, age, social state, occupation, family history, habits, and previous history, leaving to the clinical blanks the record of special illnesses under one's charge It seems desirable to reserve the first page of the folder (from the standpoint of its use as a vertical folder, the outside) for diagnosis and dates This space has no other use unless for extended notes on the general history of the individual requiring more than the ruled space on the inner side of the folder

As in the card ledger there are open and closed accounts requiring for convenience two sets of guides, so in histories two sets will be required, one for current histories and the other for those which may be considered either permanently or temporarily closed It is inevitable that many of the folders will become overfilled in time This may be regulated by removing the slips to an envelope of the same size as the cards, or to another folder inscribed with the name of the patient, and filing them among the closed histories So far as possible the slips removed from the primary folder should include the records of one or more complete illnesses after the entry of their dates and diagnoses on the primary folder In chronic cases this may often be impossible The storage envelopes or folders should have written on them the name, diagnosis and dates included With a system of cross-references it would be perfectly possible to have for storage purposes a diagnosis index rather than an alphabetical index.

Without the considerable outlay for furniture, demanded by some systems advertised to physicians, any one who can reach, personally or by letter, a dealer in office supplies and a printer equipped to turn out satisfactory prescription blanks may secure the necessary supplies with or without any modification of the details These will be the ledger cards and guides from the dealer in office supplies, from stock if standard sizes have been selected, the folders, made to order by your printer or ordered by the dealer from the makers of cards—since accuracy in size is of some importance the latter might be more satisfactory, the prescription blanks, those supplied by your druggist or made to order by the printer, the clinical blanks and cover made to order by your printer

Probably the most convenient place to keep these records is the drawer of the office desk With partitions to accommodate the length of the guides, trays are unnecessary If the use of this drawer is impossible a special case of drawers will be necessary, and these are kept in great variety by the dealer in office supplies Past notes may be consulted or carried to the bedside as a card might be, but, since it is impossible to insure that a physician doing other than an office practice will have with him at all times a complete record of every case, I have done what seemed if theoretically second best, actually the most satisfactory thing in providing for to-day's notes

AN ADDITION TO OUR METHODS OF DETERMINING THE OUTLINES OF THE STOMACH

MILTON K MEYERS, M D
Voluntary Associate Pepper Clinical Laboratory
PHILADELPHIA

This method has reference to the determining the outlines of the stomach after the stomach tube has been passed and the viscus has been inflated with air by means of a rubber bulb At present two procedures for determining the outlines by percussion are in use, namely, by simple percussion and by auscultatory percussion That the former is inexact is proved by the fact that the second has been in subsequent use, at times it is difficult to determine whether a tympanitic note is due to the inflated stomach or to a distended colon As objections to auscultatory percussion or the auscultiing with a stethoscope of the note elicited by percussion, is the fact that the note varies in intensity according to the distance from the stethoscope the organ is percussed, and that there is a boundary zone, in some cases quite wide, of uncertain tympany

In the method about to be described the stomach is distended to a moderate tenseness with air, and the air confined by exerting compression on the rubber tube near the mouth of the patient It is better that the tube be compressed by the fingers of the patient or of a reliable third person, but in cases in which the patient is unintelligent and no third person is at hand the doctor may himself compress the tube as indicated

The viscus is now percussed indirectly, or, if the physician be holding the tube with one hand, directly It will be noticed that any vibration communicated to the free walls of the stomach will be transmitted to the compressing fingers through the medium of the tube, and that when any other organ is percussed this transmission is absent

Percussion and auscultatory percussion may, of course, be used as checks to confirm the accuracy of this observation According to the method described, however, the line of demarcation between stomach and intestines may be determined with definiteness Any percussion-stroke over a moderately distended colon is not transmitted, and if a colon be so distended that its walls become tense, with the possibility of transmission, such a fact is apparent on inspection of the abdomen alone I have used this method in a limited number of cases and have found it accurate and reliable

2134 North Eighteenth Street

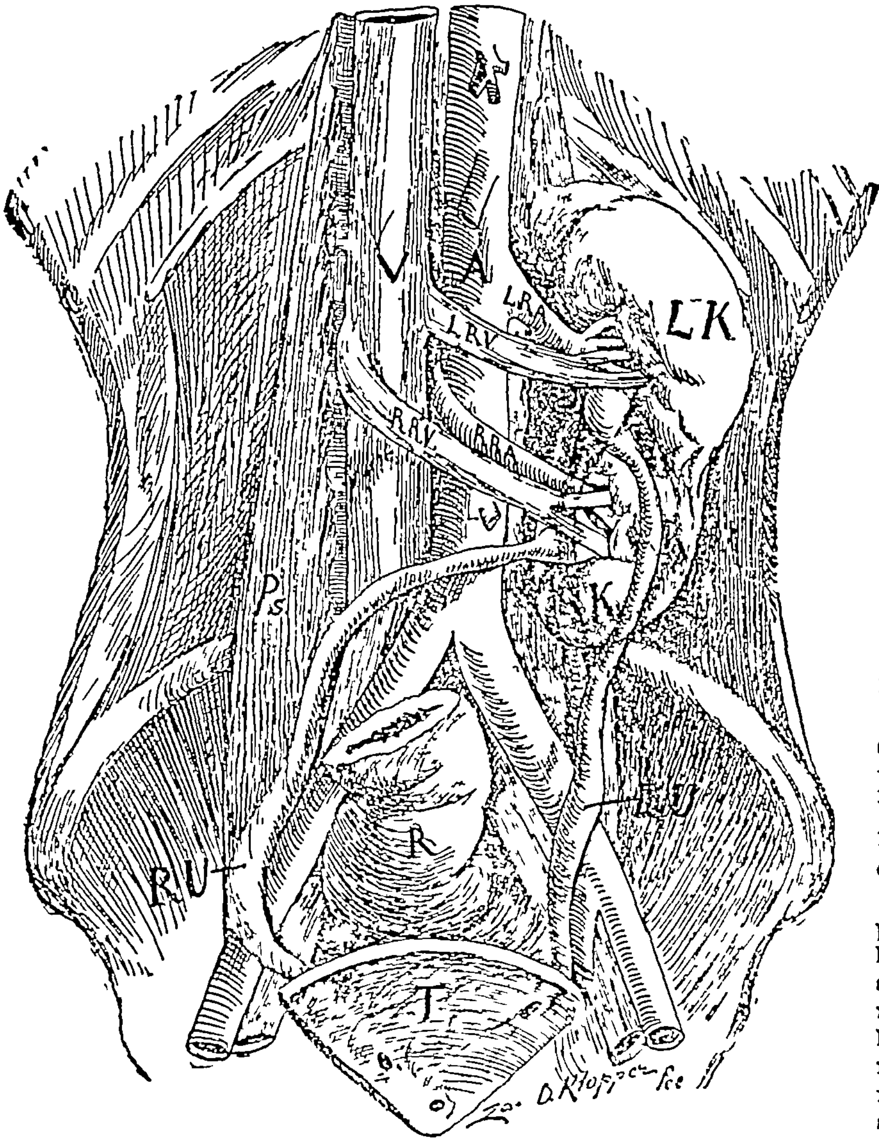
Cave Dwellers—The modern civilized man is almost as really a cave dweller as was the cave man of prehistoric times He shuts himself away in an air proof, water proof, light proof house and wonders why he gets puny and sickly, wizened and consumptive—*Good Health*

CONGENITAL TRANSPOSITION OF KIDNEY

PAUL GRONNERUD, M D
Associate Professor of Anatomy and Operative Surgery, Chicago Policlinic
CHICAGO

By presenting this illustration of renal abnormality found by Dr Charles H Parkes, demonstrator in the Department of Operative Surgery and Anatomy at the Chicago Policlinic Laboratory, I wish to call attention to the uncertainties, even after accurate ureteral catheterization (unless *x*-ray pictures are taken with catheter *in situ* or a double exploratory incision) in surgical procedures on the kidneys A study of this illustration, which is remarkably accurate, will show the clinical possibilities

Due to some congenital misarrangement, the right kidney is transposed to the left side The blood vessels to this kidney, however, arise as though it were properly placed from the normal level and side of the aorta and vena cava The ureter enters the bladder normally at the right side of the trigon after crossing the posterior abdominal wall at the level of the fifth vertebra



V vena cava A, abdominal aorta LK left kidney RK right kidney LU left ureter RU right ureter R rectum T trigon of bladder, Ps psoas muscle LRA left renal artery LRV left renal vein, RRV, right renal vein, RRA, right renal artery

The left kidney is normally located except that, if the generally accepted facts of the regional anatomy of the kidney placing two-thirds of the kidney above the twelfth rib are accurate this kidney is too low It will be noticed that the ureteral meatus in the trigon from this kidney is considerably higher than that of the right side which condition is probably due to traction The kidney mass on the left side showed one common fatty capsule The fibrous capsule is also one continuous covering for both kidneys with a depression around the circumference of the mass indicating the upper limit of the right and the lower limit of the left kidney The parenchyma is fused by fibrous connective tissue rather than being continuous in structure The mass showed two distinct pelves with the vessels relatively distributed, as shown by illustration

PRIMARY TYPHLITIS SIMULATING APPENDICEAL ABSCESS AND ILEOCECAL TUBERCULOSIS

ERNST ZIMMERMAN, M.D
Attending Gynecologist to Blessing Hospital
QUINCY, ILL.

The following case is deemed worthy of a detailed report on account of the paucity of the literature regarding primary typhlitis and the consequent difficulties in diagnosis which it presents, and on account of the unusual complications in the present case None of the works on appendicitis or on diseases of the intestines or the general works on surgery give any adequate account of this trouble Hemmeter gives only two sources of ileocecal tumor not due to primary appendicitis, i e, cecal tuberculosis and carcinoma of the cecum Eisendrath in his recent work on "Surgical Diagnosis" adds a third, ileocecal actinomycosis Dr Clarence A McWilliams, in a paper read before the New York Surgical Society, Feb 27, 1907,[1] under the title "Primary Typhlitis Without Appendicitis," gives the history of a case very similar to mine in which he assumed that the cecal tumor was either tubercular or carcinomatous, and resected it Pathologic examination showed simple inflammation and infiltration affecting all the intestinal layers adjacent to the cecum, the inflammation proceeding from within the cecum My case is as follows

History—Mrs N S, aged 30, gave no history of previous illness except the usual diseases of childhood She menstruated first at the age of 13 years, and then regularly up to date excepting when pregnant the flow lasting usually four or five days She had had three children, her labors being normal, no miscarriages Youngest child 4 months old She menstruated again in May, 1907, for the first time since the birth of last child, the flow lasting about thirty six hours and being unaccompanied with pain In January, 1907, she woke one night with severe pain in the right iliac region This grew better in an hour or so, but her right side had since been more or less tender I first saw the patient May 19, 1907, and learned that aside from tenderness in her right side she had been perfectly well up to the evening of May 16, when she began vomiting and developed a severe pain in the epigastrium, some fever and diarrhea The condition continued except that the pain gradually localized itself in the right iliac fossa

Examination—This showed heart, lungs and pelvic organs to be normal The area over the region of the appendix was very sensitive, but nothing further could be found out that day on account of rigid abdominal muscles Her temperature at this time was 102 5 F and pulse 100 She was removed to Blessing Hospital the following day and all food withheld Her temperature this day was 99.8 F and pulse 84 but her right side was just as sensitive and her bowel movements as frequent May 21 a distinct mass could be made out by both vaginal and abdominal examination in the right iliac fossa the temperature then being at noon 100 2 F and at 8 p m 99 8 F May 22 temperature was 100 2 F, pulse 80 at 8 p m, and the tumor was somewhat larger May 23 temperature was 101 F at 4 p m and 101 8 at 8 p m and the mass was more sensitive, and suspecting appendiceal abscess she was ordered prepared for operation the next morning May 24, before the operation, her temperature was 101 F, pulse 98, and the mass was as large as a large sized orange

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[1] Anns of Surgery 1907

Operation—Ether anesthesia was used and the incision was made over the center of the mass which corresponded to the outer border of the right rectus muscles, a little lower down than midway between the anterior spine of the ilium and the umbilicus On retracting the edges of the incision the greater omentum came into view covering the cecum and ileum, and the ileum, omentum and cecum were firmly united by adhesions The ascending colon was also firmly adherent to the parietal peritoneum The appendix was situated to the outer side of, and adherent to, the cecum, and was congested, thickened and distended The appendix was ligated removed and the stump buried by a purse string suture The walls of the cecum and the lower six or eight inches of the ileum were inflamed and very much thickened, the walls of the cecum averaging about three fourths of an inch in thickness The ileum in that region was matted down by adhesions, but no attempt was made at their separation The extensive adhesions the absence of pus, the very great thickening of the cecum and ileum made it probable that the tumor was an ileocecal tuberculosis

Postoperative History—After the operation the condition was good and she made an uneventful recovery as far as the appendectomy was concerned The temperature never rose above 99 5 F after the operation and in a course of three days was normal The stitches were removed on the ninth day, the wound having healed by first intention Her bowels moved freely on May 28 and then once a day until June 7 June 8 she was removed to her home, and on the way there in the ambulance developed colic and vomiting On the evening of June 8 I found her with the abdomen somewhat distended and bowels undergoing very active and visible peristaltic movements She complained of the attacks of colic, but no pain in abdomen during the intervals of intestinal peristalsis She vomited at that time a small quantity of mucus stained with bile She had no bowel movement June 7 and none June 8 and was passing no flatus I withheld all food and drink and gave hypodermically morphin sulphate, ¼ gr and ordered enemata of soap suds and glycerin A diagnosis of intestinal occlusion was made at this time, but I was under the impression that it was due to the thickened walls of the ileum and cecum I advised a return to the hospital next day, but could not get the patient's consent On June 9, 10 and 11 the patient's condition remained practically the same, i e., she vomited mucus and bile at frequent intervals, there was active peristalsis of the intestines without abdominal tenderness or any passage of flatus or feces She was somewhat weaker however her pulse became more rapid and her temperature was subnormal During the night of June 11 the vomitus became fecal in character and the patient consented to be removed to the hospital on the morning of June 12, and was operated on during the afternoon of that day

Second Operation—An incision was made somewhat above and to the outer side of the scar of the first and a few adhesions easily separated, were found under this between the parietal and visceral peritoneum The greatly thickened condition of the walls of the ileum and cecum had disappeared and they seemed about normal The ileum at its junction with the cecum was simply matted down by adhesions, and these were separated as well as possible Since they were so dense and numerous that it was impossible to cover in the raw surfaces, it was thought advisable to join the ileum, where it was free from adhesions to the lower part of the ascending colon by a lateral anastomosis The ascending colon being bound down tightly it could not be brought up into the abdominal wound and the Murphy button was preferable to any other method of making an intestinal anastomosis

Subsequent History—The patient was somewhat collapsed when removed from the operating room but rallied promptly and her condition was good next morning She had a thin, yellow bowel movement and expelled some flatus fifteen hours after the operation, but had no further vomiting From this time until she was discharged from the hospital, three weeks later, she made an uneventful recovery, having no fever, no abdominal pain and regular bowel movements At the present writing (July 20) she is at home doing her own housework and has two bowel movements daily but no pain or discomfort anywhere The button has not yet been passed, but a recent skiagraph shows that it is a harmless tenant of the cecum

I was assisted by Dr E B Montgomery of this city in both of these operations and in the preparation of this report

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MILK MODIFICATION PRESCRIPTION BLANK

G W PUTNAM, M.D

AURORA, ILL.

I am suggesting to those who use the percentage system of milk modification for infant feeding a prescription blank which, I think, will make the work less tedious and more accurate than it otherwise would be These blanks should be filled out by the physician for a definite time, subject to his change if the formula used is not giving satisfaction He should have the mother or nurse return the prescription when a new one is issued, that he may keep a record of the progress in feeding On the back of the blank are printed the directions, informing the mother or nurse as to the method of preparing the different food units mentioned in the blank It will be necessary to explain to the mother or nurse the technic of preparing and keeping the modified milk and the care of the utensils used, but, after these facts have been thoroughly impressed on the mother or nurse the milk modification blanks will convey all the information needed These blanks will be printed by any printer at a moderate cost They should be made into the form of blocks or prescription books of a handy pocket size

Milk Modification for Infant Feeding. **Dr John Doe**

From 190 to 190

Baby

— Per cent Milk	ounces
— Per cent Milk	ounces
Peptonize Milk for	minutes
Milk Sugar	tablespoonfuls
Lime Water	ounces
Barley Water	ounces
Oatmeal Water	ounces
Whey	ounces
Orange Juice	ounces
Meat Juice	ounces
Albumin Water	ounces
Water enough to make	ounces
Number of Feedings	
Interval of Feedings	hours

Dr

DIRECTIONS

Percentage Milk is obtained from bottled milk delivered by milkmen. 20 per cent. milk is the upper 6 ounces 10 per cent the upper one-third, 7 per cent the upper one-half, 4 per cent. all of the bottle

Milk Sugar is obtained at the drug-store.

Lime Water is a saturated solution of unslaked lime which has been cleared by straining The lime and water should stand twelve hours before straining

Oatmeal Water—Boil two tablespoonfuls of oatmeal flour to the quart of water for thirty minutes keeping the quantity of water up to a quart and strain through muslin.

Barley Water same as oatmeal water using barley flour

Whey—Add one junket tablet to a pint of milk stir and strain off the whey

Albumin Water—White of one egg to two ounces of water

Meat Juice—Squeeze the juice from partially broiled beefsteak.

Peptonized Milk—Add one powder to four ounces of water and one pint of milk heat to 98 F as long as directed then bring it to a boil cool and place it in the ice box.

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[For other information see second page following reading matter]

SATURDAY, AUGUST 24, 1907

THE ANNUAL FOURTH OF JULY SLAUGHTER

In this issue we publish our fifth annual compilation of the results of the "celebration" of Independence Day, and while they can not be considered as in any sense a flattering tribute to our national intelligence, yet there is much satisfaction for us in the returns on tetanus mortality When THE JOURNAL first collected statistics on this subject, in 1903, the startling number of deaths for that year was 466, and of these 406 were due to tetanus, we also found reason for believing that this number was not greatly in excess of the results of the years immediately preceding it On the publication of these figures a general alarm was sounded throughout the country and definite methods were adopted for a more sane method of celebration, with results that were at once apparent, for the next year the number of cases of tetanus was but 105 This improvement has steadily continued, so that in 1905 there were 104 cases, in 1906 but 89, and this year the lowest number yet recorded, 73, was reached

There can be no doubt that this decrease in tetanus is due entirely to two causes, one being a popular understanding of the grave danger that lies in blank cartridge and in other Fourth-of-July wounds, and the other is the more thorough surgical treatment of these wounds by the practicing physicians and the frequent prophylactic use of antitoxin Assuredly, the decrease in tetanus is not due to lack of opportunity for infection, for the number of wounds received in celebrating has each year been fully as great or greater than in 1903, when there were 415 cases of tetanus Furthermore, there has been no natural decrease in tetanus for we are receiving more reports of tetanus from wounds not obtained in celebration than ever before It is remarkable that while the tetanus mortality has dropped from 406 to 62, the mortality from other causes has risen from 60 to 102, if there had not been some radical change in the handling of the minor injuries of the Fourth the tetanus cases would probably have risen likewise, or at the best, the number would have remained stationary

It would seem from these statistics that the medical profession has learned its lesson and done its part, but that the public does not care enough about the matter to insist on its own protection Every municipality has laws prohibiting the use of firearms and large cannon crackers, but in compliance with popular sentiment they remain unenforced Here and there some active body of citizens or some alert public official has insisted on the enforcement of the statutes, with the result of securing safety and comparative peace for the community but more frequently the laws have been honored solely in the breach

We must class this public indifference with those other manifestations of the cheapness of human life in our country, which permits us to shock the civilized world with our frightful figures of fatalities in railroad wrecks and in industrial accidents, not to mention our peaceful submission to universally endemic typhoid hydrophobia and other preventable diseases Possibly these things are the results of overestimation of the importance of "personal liberty" and fear of governmental parternalism inherent in us, we leave that question to the sociologist, while we maintain that the attitude of every medical society and of every medical man should be that of active insistence that every law passed for the preservation and improvement of health must be enforced There remains a great deal that can be done by local medical societies in this regard, and that much can be done for the improvement of the conditions on the Fourth is shown by what has been accomplished in some communities

SANITATION AND POPULATION

While there is frequent emphasis of the large saving of life in the last half century as the result of the development of sanitary science and the enactment and enforcement of sanitary regulations of all kinds, especially in large cities, there is an impression in many minds that not so much has been accomplished in this way for the increase of the actual living populations of civilized countries as might reasonably be expected from the claims made by enthusiastic advocates of modern scientific sanitation The only way, of course, that the actual improvement in the situation as regards the influence of the lower death rate produced by state and city hygiene is the collation of statistics of present day populations It is generally recognized that the birth rate in civilized countries has fallen, very decidedly as a rule, rather than increased in the last half century, and, therefore that any increase in population must be due to a lower death rate consequent on sanitary improvements The figures for Europe are not a little startling in this regard We have taken millions of people from Europe during the last half century, other European millions have gone to other parts of the globe, yet the population of this geographical grand division has increased from about 250 000,000 at the middle of the nineteenth century to about 400,000,000 at the beginning of the twentieth century

This means that on a falling birth rate and in spite of immigration and the ravages of at least two important wars—that between Austria and Germany in 1866 and between France and Germany in 1870—the population of Europe has nearly doubled in less than two generations. Some of the details of this increase are interesting. During this period the population of Ireland has been halved in spite of a high birth rate. This, of course, is due to emigration. The increase in the population of France has been very slight because there has been an extreme reduction in the birth rate. A French family that has more than two children, in the cities especially, is so remarkable as to attract attention. In most families there is but one child. A suggestive picture of the situation is to be found in the pointed answer made in one of the French comic papers not long since. "Are you sure that she was married twice?" "Oh, yes, why she has two children!" The decrease in the population of France continues in spite of various governmental modes of encouragement of the birth rate and in spite of the laxest kind of laws with regard to illegitimacy.

The two countries at the extreme ends of Europe which differ most in education, in political status, in civilization, in freedom and in nearly every other national quality that can be thought of—England and Russia—agree in this that their numbers have actually doubled in the somewhat less than two generations of the last half century. The causes are not the same in the two countries, but, on the contrary, are the opposite poles among the factors which bring about increase of population. Russia has a very high birth rate and England has a smaller death rate than any other country in Europe. The German population has increased wonderfully during this period, and yet not to the extent which would ordinarily be expected from our traditions of German domesticity. The authority for these figures is Professor Sombart of Berlin, who is quoted in the *American Review of Reviews* for August, so that there can be no doubt that the German figures must be considered not only as unprejudiced, but as absolutely accurate for Germany at least. What now constitutes the German Empire contained approximately 25,000,000 of inhabitants about the beginning of the nineteenth century. When the empire was formed after the war with France in 1871 the population of the imperial territory was about 40,000,000. In 1905, according to the official figures, the population in round numbers was 60,000 000. In the last generation Germany has added one-half to its total population. It is the appalling contrast of these population statistics which has led to the strenuous efforts on the part of France to abate the national misfortune which appears to be impending in the falling birth rate, and of late actual decrease in population, while her rival across the Rhine grows so fast.

Some of the statistics with regard to the racial elements in the population are likely to be of special interest to America because we have millions of various European races among our population as the result of recent immigration. The Teutonic peoples have about held their own in their proportionate number in European population during the past century. The Latins have lost the preponderance which was theirs a century ago, and now the Slav represents the most important factor in the population. The reversal of statistics in this matter is very striking. Professor Sombart says "If Europe a hundred years ago was preponderatingly—that is, almost three-fourths—Germanic-Latin it is today preponderatingly—likewise three-fourths—Germanic-Slavic." It is no wonder the German professor asks the very pertinent question "And a hundred years hence what?"

Among the Slav nations there is a favorite expression "The past of Europe belonged to the Latins, the present of Europe belongs to the Teuton, but the future of Europe belongs to the Slav." The figures that we have quoted would seem to emphasize this rather strikingly. Among our own population it is evident that the same factors will work out the same conclusions. Our sanitary regulations have reduced the death rate markedly. Education and other factors have reduced the birth rate among native Americans, and among those from western Europe generally. The birth rate among our Slav and other immigrants from eastern Europe has not yet been thus affected. The future of our population, then, is likely to resemble that of Europe to a great extent. It seems worth while to face opportunely the problems involved in this consideration and to realize what the outcome of present conditions is likely to be. Physicians almost more than any others in the population are interested in the reflections which naturally arise from the thought of our satisfyingly low death rate but rather disquieting decrease of birth rate.

THE RELATIVE PREVALENCE OF SPECIAL DISEASES AMONG PORTO RICAN AND FILIPINO NATIVE TROOPS

It is not perhaps generally realized that the United States maintains in the tropical countries under her control forces, large or small, of native troops. The efficiency of these troops compared with white troops serving under the same conditions and their relative liability to special diseases becomes a matter of considerable interest.

The Porto Rican regiment, of which the enlisted men are all natives, but the officers mostly American, was organized in February, 1901, and has served entirely in its own country. Since May, 1904, no American troops proper have served in Porto Rico, so that the comparisons with white troops refer to those serving in the Philippine Islands. For disease the admission and constantly non-effective rates of the Porto Ricans are slightly better than for white troops in the tropics, but their death and discharge rates are higher. Typhoid fever was very rare until 1906, when an outbreak occurred with nine cases and two deaths. Malaria, while steadily increasing in prevalence, has always shown a lower rate than for white troops, the rate for dysentery is less than a tenth of that among white soldiers in the Philippine Islands. Tuberculosis and alcoholism are much less frequent among the Porto Ricans, while acute articular rheumatism and all forms of venereal diseases give far higher rates than for the white troops.

Comparing Porto Rican troops with Filipino native soldiers, the former have much higher rates for filariasis, influenza, venereal diseases and articular rheumatism, while the latter show a far greater prevalence of beriberi, dhobie itch, dengue, tropical ulcer, malaria and dysentery. Beriberi, which has not been reported among the Porto Rican troops, causes a large non-effective and death rate among the Filipinos.

Comparing Filipino troops with white American troops serving in the same locality, we find, as is to be expected, that the admission, discharge and non-effective rates for the former are considerably lower than for the latter. This is explained by the fact that the Filipinos are serving at home under conditions natural to them, but inimical to the white race; nevertheless, the death rate is considerably higher among the Filipinos. This is largely accounted for by the undue prevalence of tuberculosis, cholera and beriberi among the latter.

The Americans suffer more from venereal diseases and alcoholism, the latter condition being very rare among the Filipinos, from dysentery and diarrhea, from dengue, rheumatism and typhoid fever, while the Filipinos are especially liable to malaria, beriberi, bronchitis and pneumonia.

STAPHYLOMYCOSIS

As has been observed, septicemia and pyemia have now become medical rather than surgical diseases. It might further be added that the advent of bacteriology, and especially the use of blood cultures, has led to the division of septicopyemia into subvarieties according to the etiology. The most important of these subdivisions are streptococcus sepsis, or, as some prefer to call it, streptococcemia, and staphylococcus infection or staphylomycosis. A good deal of attention has been given in this country to blood culture work, and some writers, Libman, for example, have published the results of extensive observation. The various causal factors and the common sites of infection in streptococcus sepsis have been pretty well exploited, but the same is not true of the staphylococcus infections.

Under the caption, "Staphylomycosis," Otten[1] has recently given an extensive resumé of the medical aspect of staphylococcus sepsis, based on fifty-five cases observed in the clinic of Lenhartz. The origin of the sepsis demonstrates in a very forcible way the fact that the most serious general infection may originate from the most trivial local focus. We were prepared to expect that in diabetics and other debilitated individuals infection from trivial injuries would be reported, but that serious sepsis frequently originates in individuals in ordinary health from boils, paronychiæ and superficial skin wounds, is rather a surprise. Otten's figures show that in over 5 per cent. of all patients with staphylomycosis the infection originated from a boil or carbuncle, a panaritium, or a slight wound of the skin. Infections from the mucous membranes, and especially from the urinary tract and the puerperal uterus, were next in importance, and, finally, osteomyelitis appears as a fairly frequent source. The variety of staphylococcus present seems to make no difference in either the extent or the severity of the lesions. It has commonly been held that *Staphylococcus aureus* is more virulent than *Staphylococcus albus*, but this is not borne out by the experience in the Hamburg clinic. About 80 per cent. of the patients succumbed to the infection, a distressing number when we consider the indifference with which the commonest sources of infection in this class of cases are regarded.

The localization of the metastases in staphylomycosis varies considerably in different patients. There may be a single metastasis in the form of an abscess of the liver, brain or perirenal tissues, or there may be multiple small foci of pus. A striking fact brought out by Otten's inquiry is the frequency with which endocarditis is associated with staphylococcus infections, especially those which originate in the urinary tract. In 25 per cent. of the patients observed by Otten endocarditis developed. Most commonly the mitral valve or the mitral and aortic valves were the ones involved. Occasionally the tricuspid or pulmonary valves were implicated. This is a striking contrast to the frequency of endocarditis as an association of streptococcus infection, in which it occurs in only a trifle over 4 per cent. of the patients.

A depressing fact which studies like this often bring to mind is the futility, up to the present, of our efforts to combat most acute bacterial infections. In a few instances, active surgical intervention and the evacuation of local collections of pus leads to prompt recovery. In many others, it seems as if we could but sit by with folded hands and watch the patient die. Bacterial vaccination has not yet been properly tested in this class of cases; perhaps something is to be hoped from it. Otten's study demonstrates the great value of the systematic examination of cultures from the blood, spinal fluid, urine and pus in reaching a diagnosis. In some instances, an accurate diagnosis is undoubtedly life saving, for it leads to a more careful search for metastatic abscesses, and the search is often successful.

STREET ACCIDENTS

It is well known that in our large cities many physicians are in the habit of ignoring the gathering of excited individuals on the street corner, which tells of the presence of a victim of some accident or sudden illness, with about the same degree of assiduity that a debtor might display in overlooking the presence of some passing creditor The explanation which one often hears for the assumption of this attitude sounds reasonable enough on the face of it "I have no instruments, no medicine with me, and if I had them I should probably not have time to make use of them The ambulance will be here in a few minutes and the patient will be taken to the hospital, which is surely the best place for him By pushing in I shall be able to accomplish nothing and shall just add one to the crowd which is already too large." And so the patient is left to the tender mercies of innumerable would-be good Samaritans, who, in lieu of oil and wine, administer generous doses of whisky, souse the patient with water, and enthusiastically order each other about

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[1] Deutsch. Arch. f. klin. Med., July 10, 1907.

While the physician's conjecture as to the probability of his being of any material assistance is undoubtedly correct in the majority of instances, it occasionally happens that prompt action might be the means of saving life An improvised tourniquet or digital pressure intelligently applied in case of a dangerous hemorrhage, or the immediate application of artificial respiration to a victim of electric shock or drowning might be the occasion of saving a life which would be sacrificed if no treatment were instituted until the arrival of the ambulance An interval of ten to twenty minutes not infrequently occurs before it is possible for an ambulance to reach the scene of accident It is, therefore, the duty of a physician to at least ascertain what the trouble is and whether his services are required

If life is not threatened the physician can often do much to render the patient more comfortable until further assistance arrives The very fact that some one is present who recognizes the condition and knows what should be done is often of inestimable comfort to the injured one The authoritative voice of the physician can at least stop the senseless and often harmful efforts of the volunteer helpers In case of syncope any constricting clothes can be loosened, and even the epileptic, who creates such a sensation among the onlookers by his dramatic performance, will surely appreciate a little care exercised in saving his tongue another vicious laceration The passing physician will nearly always prove to be of some assistance, and by volunteering he may save himself the reproach of allowing the death of some individual when it was within his power to prevent it.

ONE WAY TO CHECK FOURTH OF JULY CASUALTIES

One way to make a sane Fourth of July seems to have been demonstrated in Council Bluffs, where the chief of police utilized the principle of setting a rogue to catch a rogue very cleverly and with the best results He began some years ago making arrests during several days preceding the Fourth, and let the offenders off on condition that they should serve as special police to prevent others violating the ordinances The plan worked so well that he has continued it, and this year, the day before the Fourth, he swore in as special police, and furnished with stars, twenty-five boys and girls representing some of the best families in the place, with the result, it is said, of giving the town the safest and sanest Fourth it has ever enjoyed Whether such a plan would work as well in very large towns may perhaps be questioned, but it appears that it might be an excellent thing in many smaller cities and in the small towns and villages that furnish so many of the casualties of the Fourth Any arrangement that reduces traumatisms and mortality is well worth trying again, and this Council Bluffs idea seems at once directly preventive and educationally useful

SUICIDE AS RELATED TO INSANITY

The act of self-destruction, in civilized countries, is a transgression of the law, and, as such, is not to be countenanced Whether or not it is ever justifiable is a question that can only be decided in the *individual case* after a thorough consideration of all of the attendant circumstances The natural tendency in all healthy human beings, and in fact in all animals, is toward self-preservation, sometimes even at the expense of others Occasionally some powerful impelling motive, such as a highly developed sense of duty, may lead to the sacrifice of the individual to preserve the welfare of others Under ordinary circumstances, inducement for self-destruction is wanting Conditions, however, do arise at times in which a person reaches the conclusion that death is preferable to life, and the question may fairly be asked whether a decision as to sanity or insanity can be based on the answer Death, usually inflicted by the state, in some instances delegated to the individual, is the legal penalty for some offences Not a few instances are on record in which a person has given up his life to save the lives of others Such an act is usually not out of the domain of sanity In this connection, the question of motive must always be considered On the other hand, it will not be denied that, in most instances, attempts at suicide represent the working of a diseased mind Under these circumstances there is a want of apprehension as to the proper relation of things, a reasoning with false premises As the result of a logical consideration of this subject Dr T Claye Shaw[1] holds that the instinct of self-preservation is so modified by man's place in Nature and by his mental development that the actual necessity or advisability of self-destruction at times takes the place of the primary instinct and may become a secondary or developed instinct in itself, and that, therefore, suicide, which is itself not a legitimate act, may yet be the result of a sound mental process He would reserve the term suicide for the person who deliberately comes to the conclusion to kill himself as the best solution of an *impasse*, while considering those persons in whom disease leads to a fatal termination as the victims of an attack of insanity of destructive nature He expresses the axiomatic conclusion that the instinct of health is conservative, but subject to the deliberate will, which may extinguish it or invert it, while the instinct of disease is destructive, and the means for its final accomplishment lie in the reaction between the false individual and his surroundings

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[1] Lancet April 20 1907 p 1067

AN EDDYITE FOR PROFIT

It is one of the common occurrences in the average physician's life work, especially if that work is being done in a city, to have as a patient some individual who makes it a point to sneer at physicians and to belittle medical practice Poor old Dowie, who has now gone to his reward and whose "church" and its commercial appendages are, like their creator, now in process of dissolution, was most bitter in his denunciation of physicians—in public—so bitter, in fact, that his deluded followers would have died, and in many cases did die, rather than call in a physician But he, the high priest of his cult, did not hesitate to call in a physician—in private—when he became ill From Boston comes the news that Joseph Armstrong, a prominent Christian Scientist, manager of the *Christian Science Journal* and publisher of all the Christian Science literature, was needed to give a deposition in the case now pending against Mrs Eddy When sought Armstrong could not be found, not having appeared at his office for many days Investigation revealed the fact that he was suffering from an attack of pleurisy and was under the care of regular physicians "When the devil was sick, the devil a monk would be, when the devil was well, the devil a monk was he" So the Dowieites, the Eddyites and numerous other "ites" who when well and painfree profess a distrust in, and an abhorrence of, physicians and the profession of medicine, when ill and racked with pain find the medical man a very handy person to have around

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Medical News

CALIFORNIA

Examination—A competitive examination for surgeons of the emergency hospitals of San Francisco will be held August 31

Physician Exonerated—Dr Carlotta R Deckelman, Monterey, alleged to have been connected with the death of Mrs Catherine Webster, who died under suspicious circumstances July 31, was exonerated by the grand jury August 8

Ill and Injured—Dr Andrew W Morton, San Francisco, chief surgeon of the Santa Fé System, was thrown from a stage near Dyerville, August 3, and fractured his nose and two ribs——Dr Irvin N Frasse, Los Angeles, who has been seriously ill, is reported to be convalescent——Dr Albert S Adler is reported to be critically ill at his home in San Francisco

Personal—Dr J Underwood Hall has been appointed a member of the board of health of San José, vice Dr M V Mulcahy, resigned——Dr Frederick W Browning, Haywards, has been appointed health officer, vice Dr J P Tormey, deceased——Dr J W Pollard, Los Angeles, has gone to Chicago and New York for postgraduate work——Dr Edward F Holbrook San José, has been appointed assistant surgeon of the new hospital division of the Southern Pacific System——Dr Charles W Mills, Arcata, has returned from Europe

Bubonic Plague.—Five cases of bubonic plague four of which have resulted fatally, are reported to have occurred in San Francisco during the week ended August 17 The patients were, with one exception, of the poorer class of foreigners Active measures were at once taken by the local, state and federal authorities, and the spread of the disease is not feared In the case of one patient, a sailor from a coastwise steamer, the steamer was ordered into quarantine with its passengers The shacks inhabited by the other patients were fumigated and sealed

DISTRICT OF COLUMBIA.

Personal—Dr George M Kober sailed from Baltimore for Bremen, August 14——Dr Charles G McCallion believing that he was taking jamaica ginger, swallowed a quantity of formaldehyd August 11 and is seriously ill at the Emergency Hospital

Examination for Medical Positions—The examination to fill vacancies as fire and police surgeons, colored medical inspectors of schools, physicians to the poor, and resident physicians at the Washington Asylum Hospital, called for August 16 by the United States Civil Service Commission, has been postponed until September 16

ILLINOIS

Smallpox at Winslow—Owing to the large number of cases of smallpox at Winslow, and the failure of the authorities adequately to enforce the quarantine regulations, the secretary of the State Board of Health has directed Dr C E Crawford, Rockford, inspector of the board, to see that quarantine is maintained

Traction System Hospital Association—The McKinley Interurban Traction System has announced the appointment of the following surgeons Chief Surgeon, Dr Stephen C Glidden, Danville, Dr Charles F Hough, Champaign, Dr Jephtha D Knott, Monticello, Dr George S Edmonson, Clinton, Frank M Ewing, Lincoln, Tyler, Meriweather, Decatur, Fred M Wilbur, Riverton, George N Kreider, Springfield, Eliot R Motley, Jr, Virden, James S Collins, Carlinville, Joseph Pogue, Edwardsville, J W Scott, Granite City, and Carl E Black, Jacksonville

Personal—Dr Samuel A Graham, chief of staff of the Eastern Illinois Hospital for the Insane, Hospital, has resigned and will enter practice at his home in Clinton——Dr Robert B Hough, who has been assistant physician at the Asylum for Feeble Minded Children, Lincoln, has gone to Elgin as first assistant physician in the Illinois Northern Hospital for the Insane——Dr James W Pettit, Ottawa, has been appointed delegate from Illinois to the International Congress on Tuberculosis, to be held in Washington in 1908——Dr Arthur E Prince, Springfield, has purchased property in Bloomington at a cost of $35,000, on which he will erect a building for a sanatorium

Chicago

Personal—Dr Joseph B De Lee has returned from Europe——Dr Joseph R Waldmeyer was attacked by a delirious patient August 18, and received a number of scalp wounds and a fracture of the left arm——Dr A L Derdiger has resumed practice, having returned from postgraduate work in the East

Contagious Diseases—Of the 176 cases of contagious diseases reported during the last week, 43 each were of scarlet fever and diphtheria, 37 of tuberculosis, 22 of typhoid, 18 of whooping cough, and 11 of measles As compared with the preceding week this is a reduction of 17 in scarlet fever and 5 in measles, while the cases of typhoid were exactly doubled

Typhoid Fever—The department of health has issued a warning against typhoid fever, as during the first 16 days of August 33 cases were reported and 31 deaths This is the highest death rate from the disease since 1903 Typhoid may be expected during the remainder of August and all of September On the conservative estimate that there are 10 cases in the city for every death reported, there are more than 300 cases

Chicago's Health—The total deaths from all causes for the week ended August 17 was 670, 24 more than for the preceding week and 139 more than for the corresponding week of 1906 The respective annual death rates being 16 58, 15 98 and 13 52 per 1,000 Acute intestinal diseases caused 107 deaths consumption, 57, heart diseases, 44, pneumonia, 41, violence (including suicide) 40, and nephritis, 38 Of the contagious diseases, typhoid fever caused 18 deaths, whooping cough, 11, scarlet fever, 8, diphtheria, 3, and measles, 2

KENTUCKY

Personal—Dr Dickran H Erkiletian, Casky, was elected president of the Society of Free Armenians at the election held in Athens, Greece, July 10

State Medical Examiners' Meeting—The Kentucky State Medical Examiners' Association will hold its third annual meeting in Louisville in October in connection with the meeting of the state medical society Three of the papers are to be presented by medical directors of local insurance companies All life, casualty and pension examiners in the state are eligible to membership

Wretched Conditions in Charitable Institutions—The committee appointed at the request of Mayor Bingham from the

Jefferson County Medical Society, composed of Drs Sidney J Meyers, William Bailey and Cuthbert Thompson, to investigate and report on the condition of the eleemosynary institutions of the city, made its first report on the condition of the Louisville City Hospital As a result of this report the mayor has requested the resignation of Mr J C Vogt, the superintendent, and has signified his intention of appointing Dr Jewett Menefee to succeed him About a year ago Dr Menefee brought charges against the management of the City Hospital, these were investigated by the board of public safety and none of the charges sustained The report as rendered by the investigation committee bears out practically all of the charges as made by Dr Menefee The report shows a deplorable state of affairs at the hospital The detention ward receives cases of contagious diseases, delirium tremens and persons of unsound mind This ward is particularly unsanitary, with filthy bath tubs and mattresses, one room having neither light nor air The wards are overcrowded, the mattresses are filthy and wet, the surgical dressing rooms dirty, there is a scarcity of linens, soiled dressings kept in open cans in the surgical wards several days before removal, no overhead light is provided for in the operating room, the sterilizers are antiquated, dirty ice boxes in the kitchen contain ants, spiders and cobwebs, and the milk cans are uncovered and the milk is unfit for human consumption There is defective plumbing throughout the hospital, the ventilator shaft is out of use and fans broken, there is an insufficiency of ward helpers, soiled dishes are washed and kept in the ward, no knives or forks supplied to patients, all food except soup is supplied on one plate etc The nursing staff is inadequate, and the laundry is unable to meet the wants of the hospital Tubercular patients are kept in the same ward as those with pneumonia and typhoid fever This committee will be continued in service, and it has been requested to make monthly reports and suggestions as to the conduct of the hospital to the mayor and board of safety

MARYLAND

Baltimore

Personal.—Dr J B Schwatka is in Denver——Dr Edward N Brush sailed for Europe August 17 He will be a delegate of the United States government to the International Congress of Psychiatry, Neurology, Psychology and Care of the Insane, in Amsterdam, September 2, other delegates to which were mentioned last week.

Changes in Infirmary Staff—On September 1 the following changes will be made in the staff of the Union Protestant Infirmary Dr Lewis Smead will resign and enter private practice in Toledo, Dr J R. Carr will succeed him Dr Peregrine Wroth will be first assistant physician, Dr John Caulk, second assistant physician, and Drs Richard P Bell and Merle T Adkins, resident physicians

MASSACHUSETTS

Tetanus Placed on List.—The Massachusetts State Board of Health has placed tetanus on the list of reportable diseases

Gift to Hospital.—Charles H Morgan and George L Newton have each given $40,000 to the trustees of the Worcester Memorial Hospital for the erection of new wards at that institution.

Personal—Dr and Mrs Robert W Lovett, Boston, are in Paris——Dr William M Conant, Boston, fell from an electric car recently and sustained a severe scalp wound——Drs Henry R. Stedman, Brookline, and George T Tuttle, Boston, have been called as experts in the Mary G Baker Eddy investigation

MICHIGAN

Communicable Diseases.—Several cases of typhoid fever are reported from Glenwood, Cass County——Several cases of smallpox are reported in the vicinity of Woodhull, and quarantine has been established

Itinerant Medicine Vender Fined—"Dr" J F Bosworth, who was arrested at Battle Creek charged with practicing medicine without a license, on information filed by the Calhoun County Medical Society, pleaded guilty July 30, and is said to have been fined $100

Personal.—Dr A. B Gregory, Ann Arbor, has been appointed assistant to the chair of otolaryngology at the University of Michigan——Dr J M. Peebles, Battle Creek, has returned from a trip around the world——Dr Harvey S Chapman received several scalp wounds from a barbed wire fence while driving east of Pontiac August 4——Dr Robert Wells Ann Arbor, has been appointed assistant physician at the State Hospital Traverse City——Dr Sair C Moore, Cadillac, fractured three ribs in a runaway accident, August 3——Dr Emile C Houle, Kearsarge, has resigned as assistant physician at the Wolverine Mine and will accept a similar position at Douglas, Ariz.

MISSOURI

Unlawful Practitioner Fined—Judge Taylor, St Louis, on August 2 is said to have fined Mrs Bessie Whittle $100 on the charge of unlawfully acting as a physician

Hospital Plans Accepted—The plans for the $35,000 addition to the Ensworth Central Medical College and Hospital, have been accepted by the board of trustees It is expected that the addition will be completed by December 1 The new building will add 30 rooms to the hospital and will provide a new operating room and several laboratories

Personal—Dr Ambrose W Teel, Kahoka, has been elected professor of physiology in the Keokuk Medical College——Dr G Wilse Robinson, Kansas City, superintendent of State Hospital No 3, Nevada, assumed charge August 1——Dr Virgil Loeb, Columbia, has returned from Europe——Dr Charles R Woodson, St Joseph, has organized a company to establish and conduct a large sanitarium south of St Joseph

State Sanatorium.—The Missouri State Sanatorium for Incipient Pulmonary Tuberculosis, Mount Vernon, was formally opened August 1 Patients unable to pay are required to make affidavit to the county clerk, and after investigation as to correctness are sent to the sanatorium in the order in which their names appear on the waiting list Patients able to pay make application to the sanatorium direct, and when vacancies occur, the person whose name is first on the list is referred to the nearest examining physician who reports the result of his examination to the chief physician, Dr O H Brown at the sanatorium A second villa is now under construction, which will be ready for occupancy about January 1 The third building, the medical wing of the administration group, will be ready for use early next year

NEVADA.

Personal—Dr Charles E Mooser, Reno, suffered severe contusions from the overturning of his automobile recently——Dr M Rollin Wallker has been appointed health officer of Reno, vice Dr John L Robinson, resigned

Hospital Notes—The Miners' Union Hospital, Goldfield, was opened July 16 with Dr A E Wheeler as surgeon in charge The building is a semi fireproof structure, 70 by 70 feet, with accommodation for 60 patients, and has cost $45,000——A new hospital is soon to be opened in Goldfield by Dr Paul F Cope

NEW YORK.

Anthrax in Orange County—Anthrax has broken out in several dairies in Orange County, and the state veterinarian, Dr Devine, has ordered all exposed cattle isolated Great efforts are being made to stamp out the disease

Harbor Pollution.—Edward Hatch, Jr, chairman of the pollution committee of the Merchants' Association of New York City, has complained to Governor Hughes that all the boroughs of Greater New York are polluting this harbor illegally, and that other cities of the state are also guilty

Insufficient Help in State Institutions—The management of the state institutions is having great difficulty in the effort to keep a sufficient number of attendants and helpers The thirteen state hospitals are now short over 500 employés, the reason given being that outdoor employment offers greater attractions and because of the higher wages paid in the country

Personal—Dr Henry B Hopkins, Buffalo, has been appointed one of the commissioners to examine into the mental condition of Mary Baker G Eddy——Dr Lacey B Darling, health officer of Palmyra, has resigned, and Dr William J Hennessy has been named as his successor——Dr Russell E Blaisdell, Poughkeepsie, has been appointed physician at the Hudson River State Hospital, Poughkeepsie

New York City

Hospitals Censured—The coroner's jury found the following verdict at a recent inquest "We censure the Manhattan State Hospital and Bellevue Hospital for failure to give the deceased proper treatment while in their care, and recommend that the Manhattan State Hospital increase the number of their attendants and adopt a system of reports to show the exact status of every patient at all times, making it possible for the authorities to ascertain at any time who is in charge of a patient"

Contagious Diseases—There were reported to the sanitary bureau for the week ended August 10, 808 cases of tuberculo sis, with 148 deaths, 221 cases of measles, with 20 deaths, 211 cases of diphtheria, with 22 deaths, 117 cases of scarlet fever, with 6 deaths, 82 cases of typhoid fever, with 18 deaths, 39 cases of whooping cough, with 17 deaths, 7 cases of cerebrospinal *meningitis, with 14 deaths*, 14 cases of varicella and one case of smallpox, a total of 1,090 cases and 245 deaths

Personal—Dr Francis H Markoe is seriously ill and little hope is entertained of his recovery——The coroner's jury decided that Dr James E Russell, who was found dead on July 21, was "garroted" by persons unknown——Dr and Mrs Aspinwall Judd, Dr and Mrs Charles C Reid arrived from Europe August 15, and Dr Clarence A McWilliams, July 15——Drs D Bryson Delavan, M S Gregory and Edward N Brush sailed for Europe August 17——Dr John S Billings, director of the New York Public Library, has gone to Europe, where he expects to visit all the principal hospitals, and will apply the result of his observations of the equipment of the new Harvard Medical School Hospital, Boston, which will be built under his supervision

OHIO

Barbers Fined.—The health officer of Cleveland, on account of the prevalence of barber's itch in that city, has had several barbers arrested because they do not follow the letter of the law as regards cleanliness Three were fined $5 and costs, two received suspended sentences, and the others asked to have their cases continued

Infectious Diseases—During the 21 weeks ended July 27 infectious diseases were reported from 113 localities as follows Measles 5 074 cases, with 51 deaths, diphtheria, 924 cases, with 103 deaths, typhoid fever, 844 cases, with 122 deaths, scarlet fever, 835 *cases, with 80 deaths, whooping-*cough, 497 cases, with 25 deaths, smallpox, 92 cases, with no deaths

Personal—Dr H Edwin Heistand, Kenton, was seriously injured *in* an automobile accident recently——Dr James D McAfee has resigned as a member of the board of health of Cleveland——Dr Robert Carothers has been appointed junior orthopedic surgeon to the Cincinnati City Hospital——Dr Frank A Stickney, Kilbourne, is making a good recovery after the amputation of his leg in Columbus——Dr George F Zinninger, Canton, who was operated on for appendicitis recently, is making *a good recovery*——Dr Walter J Smith, Reily, is reported to be seriously ill with septicemia due to an operation wound——Dr Albert E Griffin, Columbus, suffered amputation of the finger at the Grant Hospital recently——Dr Joseph J Dunn, house physician at St Alexis Hospital, Cleveland was operated on for appendicitis August 13——Dr Parker F Southwick Sandusky has been elected coroner of Erie County——Dr Jesse O Glass, Springfield, has returned from Europe——Dr Ruth Bernheim Cincinnati, has gone to Europe——Dr Charles C Mandeville, Galion fell recently while boarding a street car and fractured his *leg at the ankle*——Dr Elwood E Arnold, Columbus, physician at the state penitentiary, has resigned to accept a position with the Pennsylvania System

PENNSYLVANIA

Personal—Dr George N Mealy New Wilmington, received serious injuries recently by the falling of a tree——Dr Mary M Wolfe, *of the State* Asylum for the Insane, Norristown, sailed for Europe August 17

Hospital Contract Awarded—The contract for the erection of five buildings and dormitories for the State Hospital for Epileptics at Spring City, was awarded August 13 *The cost of the construction* of the buildings is $251 504

Cocain Sellers Fined—J J Naser and G F Smith, druggists *of* Washington, are said to have pleaded guilty before the grand jury of having sold cocain to habitual users of the drug and filling prescriptions which were not genuine and to have been fined $100 each

Infantile Paralysis Epidemic—It is *reported that an epi-*demic of *infantile* paralysis has broken out in Ridgway The disease has been raging for three weeks and the malady is not limited to children, but several adults have been attacked There are at present nearly 200 cases of the malady in this city and the death rate has been very high The disease is in a violent form and the persons afflicted as a rule range in age from 5 to 13 years It is reported that thus far three out of every four have succumbed Typhoid fever is also raging in Ridgway

Philadelphia

Bequests—By the will *of the* late Annie Potts the West Philadelphia Hospital for Women and the Home for Incurables receive $300 each, the Home of the Merciful Savior for Crippled Children, $200——A provisional bequest of one third of an estate valued at $30 000 to the Presbyterian Hospital is contained in the will of the late Elizabeth McElroy——The will of the late Martha A. Stewart bequeaths $4 800 to the Rush Hospital for Consumptives

Personal.—Dr Mazyck P Ravenel, delegate of the United States at the International Congress of Hygiene and Demography, and recently elected professor of bacteriology at the University of Wisconsin, sailed for Europe August 11——Dr Mary P S Rupert, anesthetist of the Woman's Hospital, sailed for Europe August 3——Dr S Weir Mitchell is spending the summer at Bar Harbor, Maine——Drs Lawrence F Flick, Joseph Walsh and Daniel J McCarthy will sail for Europe August 29 to attend the International Conference on Tuberculosis in Vienna

Health Report—The total number of deaths reported for the week ended August 17 was 502 This is a decrease of 35 from the preceding week and a decrease of 37 from the corresponding week of last year The principal causes of death were Typhoid fever, 10, pertussis, 8, diphtheria, 6, meningitis, 2, consumption 54, cancer, 19, apoplexy, 20, heart disease, 40, acute respiratory disease, 20, enteritis, 99, appendicitis, 6, Bright's disease 34, congenital debility, 21, premature birth, 12, suicide, 3, accidents, 16, and marasmus 16 There were 152 cases of contagious disease reported, with 19 deaths, as compared with 131 cases and 19 deaths reported in the preceding week

TENNESSEE

Free Dispensary—The Memphis Free City Dispensary was reopened August 5 under the charge of Dr G W Cunningham

Tuberculosis Hospital—A hospital for consumptives is to be built at the state penitentiary, where there are said to be at present 45 patients afflicted with the disease

Typhoid in Nashville—During the week ended July 27, 104 cases of typhoid, with 4 deaths, were reported in Nashville The water suppply of the city, which is supposed to be at fault, is being *investigated*

Personal—A desperate attempt was made to kill Dr L Frank Sory, Adams, August 5 Dr Sory is a member of the Tobacco Growers' Association, and it is supposed that the assault was made by individuals opposed to that organization——Dr W H Pistole, Memphis, has been appointed professor of materia medica and therapeutics in the College of Physicians and Surgeons of that city——Dr E A Barber Graysville, has been appointed assistant surgeon of the Mexican Central Railroad, with headquarters at Guaymas, Mexico——Dr Edward T West, National Soldiers' Home, has been appointed governor and surgeon of the Battle Mountain Sanatorium, Hot Springs, S D

TEXAS

Investigators Contract Dengue—Passed Assistant Surgeons Joseph Goldberger and George McCoy, attached to the Hygienic Laboratory of the Public Health and Marine Hospital Service, who, on the outbreak of dengue at Brownsville, were detailed by the surgeon general to make a thorough investigation of *the nature of* the disease, soon after establishing an efficient working laboratory and beginning work contracted dengue, and on this account the investigation is temporarily interrupted

New Medical Board—The governor has announced the appointment of the State Board of Medical Examiners, as *follows* Drs James D Osborne, Cleburne, Edwin P Becton, Greenville, William B Collins, Lovelady, Garland B Foscue, Waco, and John J Dial, Sulphur Springs, of the regular school, Drs John D Mitchell, Fort Worth, and Thomas J Crowe, Dallas, of the homeopathic school, Drs Marquis E Daniel, Honey Grove, and J P Rice, Fredericksburg of the eclectic school, Dr Radford O Braswell, Mineral Wells, of the physio medical school, and R. W Collins, El Paso, an osteopath

To Prevent the Spread of Tuberculosis—The rules of the State Board of Health to govern the sanitation of tuberculosis contain the following clauses

Tubercular victims are not allowed employment in any public building in any school church or bakeshop or slaughter house Burlap is prohibited *for a floor covering* passengers on trains are not allowed to wash their teeth over wash basins and careless handling of ice to be used in water coolers is made an offense

Floors of public buildings must be swept every day after being sprinkled with sawdust wet with formaldehyd Boarding house hotel and restaurant ice boxes must be scoured and treated with acid once a week

In jails a prisoner must have 3000 cubic feet of air an hour walls must be whitewashed every month and painted every six months

Personal.—Drs Oscar M Marchman and Miles J Duncan have been appointed members of the Dallas board of health ——Dr J R Nichols first assistant physician at the Northern Texas Insane Asylum Dallas, has resigned ——Dr Pierce M Kuykendall, Moody, sustained a fifth cerebral hemorrhage, August 1 ——Dr D E Cloud, Austin, has been appointed third assistant physician at the Southwestern Insane Asylum, San Antonio, vice Dr Bruce Allison, resigned ——Dr Benjamin F Gibson, Midway, physician at the state penitentiary Huntsville, has resigned ——Dr Alfred E Thayer, professor of pathology in the University of Texas, has resigned and will move to Asheville, N C ——Drs William Olive and Lewis E Pearce, Houston, sustained painful contusions as the result of a runaway accident, August 11

VIRGINIA

Society Meeting—The Augusta County Medical Society held its regular quarterly meeting August 14 at Staunton The attention of the society was drawn to the presence of illegal practitioners in the city and county, and a committee composed of Drs Charles W Rodgers, Staunton, Thomas M Parkins, Staunton, and Walter F Hartman, Swoope, was appointed to bring this matter to the attention of the attorneys of the commonwealth The following officers were elected President, Dr Samuel H Burton, Parnassus, vice presidents, Drs Clarence T Lewis, Staunton, R Sumpter Griffith, Basic City and John F Armentrout, Staunton, secretary, Dr Achilles L. Tynes, Fishersville, treasurer, Dr Thomas M Parkins, Staunton (re elected), and censor, Dr Walter F Hartman, Swoope

Personal.—Dr Albert W Freeman has been appointed to succeed Dr E. Guy Hopkins, city bacteriologist of Richmond, resigned ——Dr Littleberry S Foster superintendent of the Norfolk Protestant Hospital, has resigned, to take effect August 15 ——Dr Edward H Claud, Norfolk, who was operated on for appendicitis a few days ago, is reported to be convalescent ——Dr William S Drewry, Petersburg, has been elected president of the Virginia Home and Industrial School for Girls ——Dr Ralph W Browne, Roanoke, recently operated on for appendicitis in Richmond, is reported to be convalescent —— Dr Edward A. Waugh, Lynchburg, is at present in Los Angeles

GENERAL

Sixth International Dermatologic Congress—The Sixth International Dermatologic Congress will be held at the Academy of Medicine, New York City, Sept 9 14, 1907 An address of welcome on behalf of the United States will be delivered by Surgeon General Rixey of the United States Navy, an address for the American universities will be delivered by Prof Ira Remsen of Johns Hopkins University, and an address for the medical profession of the United States by Dr Joseph D Bryant, President of the American Medical Association Papers will be read by some of the most famous European dermatologists, including Prof R Campana, Rome, Italy, Dr Z Falcao, Lisbon, Portugal, Dr Vinetta Bellaserra, Barcelona, Spain, Dr L Brocq, Paris, Dr Unna, Hamburg, Germany, Dr M Oppenheimer, Vienna, Prof E Kromayer, Berlin, Prof E Hoffmann, Berlin, Dr A. Buschke, Berlin, Drs Hallopeau and Gastou, Paris, Prof S Ehrmann, Vienna, and numerous others Papers are also on the program by the leading dermatologists of this country Further details may be obtained from the secretary general, Dr John A. Fordyce, 80 West Fortieth Street, New York City

CANADA

Resignations.—Dr W A. Wilkins, professor of histology in McGill University, Montreal, has resigned.——Dr Norman E McKay has resigned as professor of surgery in Halifax Medical College and has been succeeded by Dr Edward V Hogan

Canadian Medical Association.—The fortieth annual meeting of this association will be held in Montreal, September 11 to 14, under the presidency of Dr Alexander McPhedran, Toronto Dr Davy Rolleston, London, Eng., will deliver the address in medicine Dr Ingersoll Olmsted, Hamilton, the address in surgery, and Dr J George Adami, Montreal, the address in pathology In the medical section there is to be a discussion on cerebrospinal meningitis, and in the surgical section a discussion on hypertrophy of the prostate There is to be a new section this year for pathologic workers, for which a number of scientific papers have been promised.

British Columbia Medical Association.—The eighth annual meeting of the British Columbia Medical Association was held in Victoria on August 1 and 2, under the presidency of Dr Roderick L. Fraser, Victoria An important discussion took place on the subject of "patent" and proprietary medicines, and the following resolution was adopted and ordered to be transmitted to the Canadian Medical Association

WHEREAS It is morally incumbent on every medical man to prevent the public against disease and sickness as far as possible and

WHEREAS The so called patent medicine is sold without restriction throughout this Province thereby constituting a menace to the public health and

WHEREAS Proprietary medicines the composition of which are not known, are prescribed by regular physicians to a certain extent therefore be it

Resolved That the British Columbia Medical Association place itself on record as being in favor of the enactment of suitable laws for the protection of the public against patent medicines and

Resolved That it appoint a committee whose duty it shall be to institute such measures or support them if introduced by the legislators and

Resolved That it strongly disapproves of the unscientific and possibly dangerous practice of prescribing the secret proprietary medicines and

Resolved That the British Columbia Medical Council be requested to communicate with all physicians of the province drawing their attention to the undesirability of prescribing these secret proprietary medicines The treatment of advanced cases of consumption was also discussed and a resolution passed calling on the government to insist that all hospitals receiving government aid be compelled to provide for a limited number of such cases.

The teaching of public health in the schools was also brought up and a committee appointed to make suggestions whereby the present text book in use in the public schools which in the opinion of the association is unsatisfactory, should be improved The following officers were elected for the ensuing year President, Dr John M Pearson, Vancouver, vice president Dr Douglas Corson Fernie, treasurer, Dr James D Helmcken, Victoria and secretary, Dr R Eden Walker, New Westminster (re elected)

FOREIGN

International Congress Postponed—The Fifth International Gynecologic Congress, which has already been postponed once, and which was to have been held in St Petersburg has again been put off, the *British Medical Journal* says "On account of numerous expressions as to the inopportuneness of a congress in Russia"

Premiums for Temperance—The directors of the iron and steel works of Röchling (Völklingen a Saar), make the following announcement "We have concluded that even for furnace work those laborers are more valuable who use no alcohol at all Therefore we have decided to distribute premiums to those laborers who are members of a Good Templars lodge for more than one year in the following manner Such laborers as have been members for a year will receive a premium of 10 marks per quarter, those who have belonged to the lodge for two years will receive 15 marks per quarter, and for every succeeding year of membership in the lodge the premium will be increased 5 marks per quarter"

Hospital Appointments in South Africa—According to the *South African Medical Record*, the staff of the Johannesburg Hospital is vigorously opposing a ruling of the governing board that the board at any time may appoint outside practitioners directly to the senior medical and surgical posts of the hospital It is claimed that this rule would not be exercised ordinarily, but would be held in reserve in case of any European celebrity who might happen to settle in Johannesburg, and whose services would be lost to the institution if he had to pass through the drudgery of out patient work In commenting on the situation, the London *Lancet* remarks that it is in sympathy with the junior members of the staff It is unfair, the *Lancet* declares, that those who have borne the burden and the heat of the day should be ousted from the clinical reward of their labors by the chance advent of some "European celebrity" who is unwilling to follow in their industrious footsteps

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug 8, 1907

Trachoma in London

Trachoma is prevalent in the East End of London The great hospital in Whitechapel is largely used by those aliens, who are not allowed entrance into America, but who are unable to get back to their own country It seems likely that trachoma will continue to spread in the East End of London under present conditions, and its prevalence is a convincing object lesson on the laxity of British laws in regard to the ingress of foreigners

Award of Baly Gold Medal

Prof Ernest H. Starling, M.D., F.R.C.P, F.R.S Jodrell, professor of physiology at University College London, has been awarded the Baly gold medal of the Royal College of

Physicians of London The medal is given every alternate year to the physiologist who has most greatly distinguished himself in his special branch of science during the preceding two years Professor Starling has made many important investigations, including explanations of the manner in which the pancreatic secretion containing the ferment trypsin is formed

The New York Optometry Bill

Much surprise has been expressed in medical circles in Great Britain at the passage of the bill in New York state, which confers on opticians the right to practice a "specialty of medicine," the same bill further providing for the institution of an examining board of opticians

International Housing Congress

An international congress on this subject has been held in London recently Mr John Burns, president of the Local Government Board, in speaking of the overcrowding of cities, said that London is making progress It is not true of London to day, as Charles Dickens said of London sixty years ago, that "the very crutches on which the ruins are propped are decaying," or that the poor of London live in "brick boxes with slate lids" At present in London 1 in 7 of the population lives at the rate of two in a room In Manchester it is 1 in 6, in Edinburgh 1 in 3, and in Glasgow 1 in 2 The population per house in England, where people live in cottages, is 5, in London it is 8, in New York, where people live in tenements, it is 20, in Paris, where they live in flats, 26, in Berlin, where they live in barrack dwellings, there are 46 per house In New York there are 350,000 dark rooms, and 2,300,000 persons live in 82,000 tenement houses

International Congress of School Hygiene

The second congress was held at the University of London, August 5 The address of welcome was made by the Earl of Crewe In his presidential address, Sir Lauder Brunton said that one of the most important subjects is medical inspection of school children, and that it is really the keystone of medical education He emphasized the importance for weak anemic children of plenty of fresh air and sunshine, and praised work of the London County Council in opening the open air school at Abbey Wood, where weakly children can have the fresh air, rest and abundant food necessary to restore them to health and strength He also spoke of the separate schools, which are now being established for crippled children, and for those who are mentally defective He urged the necessity for physical training of all children, and stated that much could be done for cripples by this means He said that the system of cramming children is greatly to be reprobated, and that the body requires quite as much careful attention as the mind He stated that one of the most difficult and yet one of the most important questions of school hygiene is how to combine educational with physical training, so that both may be productive of benefit and not of injury to the child

Contribution to King Edward's Hospital Fund

The Bank of England has received from Mr Andrew Carnegie the sum of £100,000 ($500,000) for King Edward's Hospital Fund The gift is made unconditionally, and Mr Carnegie expressed the desire that it should be used as seems best, adding "The more strenuously for reform the better"

Public Health Laboratories for Medical Women

The Middlesex Hospital has opened well equipped laboratories which will be devoted entirely to the training of medical women in public health work and providing them with facilities for research work in bacteriology Public health is eminently a subject for which medical women are suitable as in the practice of it they have to encounter none of the prejudices and suffer from none of the inabilities which interfere with them in the practice of medicine There is a large field of usefulness for them in certain branches of the public health service, in the medical inspection of factories and schools, and in the administration of the recently passed Midwives Act Many posts of this kind are already well filled by specially trained medical women, and in the near future the number will certainly be much increased Research work in bacteriology, involving as it does a tedious attention to detail and a technic of extreme delicacy, is also a work for which women are well adapted The laboratories are now open for work under the charge of Mr A G R Ioulterton the director of the bacteriologic and public health department of the Middlesex Hospital, with Miss Hilda Whittingham, M B as assistant To some extent the laboratories will be self supporting from the first, but financial assistance from the public is asked to meet the possibility of a deficit in the future and to enable scholarships in bacteriology to be offered for women only

Hygiene in Swimming Baths

Sir Clement Cooke of the London County Council has introduced a very sensible motion for ensuring greater cleanliness in swimming baths He proposes, following the example of German baths, that all persons, irrespective of age or sex, be required before entering a public swimming bath to wash their hands and feet, and that for this purpose sufficient appliances and accommodation be provided Any one who has seen a public swimming bath after a few hundreds of persons have used it, will appreciate the object in view It is true that at present the bath attendant has power to compel any person with usually dirty feet to wash them, but it is impossible for the attendants to examine the feet of all the bathers

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug 8, 1907

Serum-Producing Horses

There are at present at the Vienna Serotherapeutic Institute forty-seven horses used in the production of the various therapeutic sera Most of the animals are those that have formerly served in the artillery service, and are not full blooded stock Full blooded animals do not easily respond to the loss of blood entailed in this work The animals when purchased are between 6 and 8 years old, and many of them have been in the institute from ten to fifteen (one even twenty three) years, and are still capable of giving a serum of high potency They are, of course, kept scrupulously clean and are given an ample amount of food and exercise Of the horses at present in the stables, twenty six are immunized against diphtheria, two against streptococci derived from many sources and three horses each against cholera, typhoid fever, tetanus, scarlet fever and cerebrospinal meningitis (pneumococci and meningococci) Two horses have been specially immunized against puerperal fever with cocci obtained from the patients in three different cases, and the serum from these animals has been used with gratifying success at the clinic of Professor Chrobak The institute supplies not only the clinics, but has the serum for sale to physicians The horses must be capable of being bled of six liters (1½ gallons) of blood every two months, and in the second year the same amount is withdrawn every four or five weeks The recuperative power of the organism is thus put to severe test

Mine Sanitation

The last coal mine disaster demonstrated that a number of lives could have been saved if means were provided to prevent the inhalation of irrespirable gases The state mines in Bohemia are equipped each with a safety chamber supposed to be gas and explosion proof, and each contains a number of breathing appliances This device has been recommended, by the commission appointed to inquire into the subject, as the best means at present available for providing safety for the miners Electricity is recommended as the best illuminant in the place of the old Davy lamp Proper ventilation has to be strictly and scrupulously attended to, and large exhausters have to be placed so as to produce a constant current of air toward the opening of the shaft

Sanatoria for Tuberculosis and Their Location

Although experimental evidence has proved that sanatoria and hospitals for the tuberculous are in no sense a menace to the public if such institutions have their own grounds and sanitary arrangements property owners in many cities are insisting that no such institutions shall be erected within a shorter distance from inhabited areas than six miles This movement is especially strong in the so called health resorts and watering places, where a diminution in the number of yearly visitors is feared Local authorities propose, as a compromise, to fix the distance at about four miles, and to select the site of the sanatorium so as to prevent contamination of air or water

Medical Fees

One of the higher courts of Austria recently rendered a decision in a case brought by a physician to recover his fees The physician had attended half a year previously the wife of a wealthy merchant and had called in a consultant he sued for both his own fee and that of the consultant Judgment was rendered for the plaintiff, and the judge remarked that strictly speaking payment of the fee was due the moment medical attendance ceased As regards the fee for the consultant, the patient is liable for its payment, even if he was not asked beforehand, as soon as he submits to examination by the consultant

Therapeutics

[It is the purpose of this department to outline an up to date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters, that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses]

Rational Treatment of Disease.

The scientific treatment of disease must always take into consideration the etiology, the physiologic disturbances that are taking place, the pathology of the disease, and the severity of the symptoms The aim of the treatment, then, is to prevent, if possible, further action of the etiologic cause, to remove that cause if it can be removed, and to combat the cause with its antidote or specific opponent if there is such The next object of treatment is to remove immediately or gradually, if it can be removed, the pathologic conditions caused by the disease, and while doing this the normal physiology of the system should not be interfered with lest by too active treatment aimed in a shotgun manner at the pathology, the normal ability of the system to combat disease be interfered with The aim should be never to obstruct Nature's protective ability by giving strong drugs in such amounts as to obstruct physiologic and antitoxic processes

The last object of treatment, although an important one, is and always must be to ameliorate, or to remove if possible, the conditions that interfere with the process of repair, that interfere with the nutrition of the body, that interfere with the sleep and comfort of the patient, and that if allowed to persist, would create complications which would intensify the seriousness of the primary disease

Any one who decries with the approbious term of "symptomatic treatment" the necessary modification of objectionable symptoms of disease is one who has not practiced medicine at the bedside except as a consultant, or in public institutions

Stricture of the Urethra.

Dr Alfred C Wood, Philadelphia, in the *Penn Med Jour*, July 1907, sums up the treatment of this condition, which is so often mismanaged, as follows

"The problem in the treatment of urethral stricture, therefore, is the removal by stretching and absorption of the deposit of fibrous tissue. The secondary results, chronic catarrh, ulceration, etc, will disappear spontaneously if the former is accomplished On the exterior of the body similar deposits would be treated by massage, passive movements, etc This principle can be applied to strictures only by the introduction of instruments to dilate the contracted part of the canal, and, just as skillful massage is the most effective means of treating external fibrous deposits, so is proper dilatation the most efficient means of treating strictures This can not be stated too forcibly It should be an invariable rule never to cut a stricture if it can be dilated It is a matter of universal clinical experience that traumatic strictures do not, as a rule, respond to dilatation These must, therefore, be cut Let it be understood however, that cutting never cures a stricture, in fact, it adds a fresh trauma and additional cicatricial tissue which would result speedily in a greater contraction than before unless careful and systematic after treatment is followed out

"Congenital stenosis of the meatus, and strictures of this region, if small enough to interfere with treatment, must be cut, they never yield to dilatation

"Strictures of the pendulous urethra, if recent and soft, may yield to dilatation, and this method of treatment should always be given a fair trial, but if old and fibrous, will usually require cutting Otis' dilating urethrotome has been the most satisfactory instrument for this purpose, in my hands One may cut to the desired caliber with much precision Do not do more than is necessary Cut a little, introduce the bulb, and if the obstruction is not relieved, cut again Albarran recommends four slight incisions at different points in the circumference

"Strictures of the pendulous urethra possess an astonishing tendency to recontraction, so that the greatest perseverance is required after operation to maintain the proper caliber

"Strictures from the penoscrotal angle to the bulbomembranous junction, unless traumatic, if passable, never need cutting

"If it is possible to pass a whalebone filiform it will almost invariably be found that by gentle persistent efforts dilatation may be carried to the normal caliber In the cases that will admit a filiform only, the instrument should be securely tied and allowed to remain in This results in twenty four hours in sufficient dilatation to permit of the introduction of a second or even a third filiform These are in like manner retained, and in the course of one or two days all but one may be removed and a Gouley tunneled catheter may be passed over this and allowed to remain, the filiform being withdrawn After a few days a sufficient dilatation may be obtained to begin the gradual dilatation by steel bougies, or if not, a larger Gouley may be introduced During all this time the patient must be given urinary antiseptics, and irrigation of the urethral canal should be practiced

"As soon as a caliber of fifteen or thereabouts has been reached, gradual dilatation may be begun in the usual way The frequency of the treatment and the size of the instrument to be used depend on the conditions present Sufficient time should be allowed between each treatment to permit the reaction caused by the stretching to fully subside If the stricture is soft and yielding, the instrument may be rapidly increased in size On the other hand, if the deposit is very fibrous and resistant, the same numbers may properly be used at two or three successive treatments It is very undesirable to increase the numbers too rapidly, as this results in laceration with the formation of new deposit and adds to the probability of contraction in the future For this reason, I disapprove of the rapid dilatation, or divulsing as it is called While this method appears to yield brilliant results at the time, it is not entirely free from danger, and my experience has been that such patients are much more apt to return in future years for a recurrence of the stricture than those who have undergone the gradual method of treatment over a longer period

"A patient who has been treated for stricture must be impressed with the fact that it may return in spite of the very best treatment, and hence he should visit his physician from time to time for an examination, or for the introduction of a bougie in order to detect the earliest stages of any recurrence If this is not done the condition may become so pronounced as to require a prolonged and systematic treatment, as in the first case"

Paresthesia.

Dr John V Shoemaker, Philadelphia, in the *Medical Bulletin* June, 1907, recommends the following prescriptions to ameliorate the nervous disturbances of the skin that sometimes occur in patients suffering from neurasthenia

℞	gm			
Arsenii trioxidi		03		gr ½
Ferri lactatis	2			gr xxx
Zinci valeratis	1		or	
Asafœtidæ	1			
Extracti sumbul	1			ãã gr xx

M. et fac capsulas 20 Sig A capsule three times a day, after meals and at bedtime

The capsule at bedtime had best be taken with some light food; as milk, crackers and water, some simple fruit or a cup of one of the simple convalescent foods, as malted milk These patients are generally sleepless and some simple food, especially if taken warm, aids them in getting to sleep Also *the above capsule (and* it is true of most drugs in pill capsule or tablet), should not be taken on an empty stomach, even with water

As a local application Shoemaker recommends the following

℞	gm or c c		
Magnesii carbonatis	2		ʒss
Creosoti	2		flʒss
Glycerini	30	or	fl℥i
Liquoris calcis	100		fl℥iii
Aquæ hamamelidis	ad 200		ad fl℥vi

M Sig Shake well, and apply to the irritated skin

An Antiseptic Gargle

Dr Charles E Souther, Cincinnati recommends the following prescription "as an efficient gargle especially in syphilitic sore throat and as a prophylactic for those who are nursing patients with diphtheria "

℞	gm or c c		
Hydrargyri chloridi corrosive	10		gr ii
Alcoholis	30	or	fl℥i
Glycerini	30		fl℥i
Aquæ destilatæ	ad 500		ad fl℥xvi

M Sig Use as a gargle every three or four hours

For Diarrhea in Children

℞	gm or c c		
Benzosulphinidi	01		gr 1/6
Olei menthæ piperitæ	03	or	gr 1/2
Alcoholis q s ad solutionem			q s
Adde olei ricini	ad 25		flʒvi

M Sig One or two teaspoonfuls, according to age

Follow this with

℞	gm or c c		
Bismuthi subgallatis	5|00	or	gr lxxv

Fac chartulas 20 Sig One powder every two hours

The following combinations are recommended by Daniel E Hughes, M D

℞	gm or c c		
Pulveris ipecacuanhæ	15		gr ii
Pulveris rhei	10	or	gr iss
Sodii bicarbonatis	25		gr iv
Sacchari	1		gr xv

M et fac chartulas 4 Sig One powder every four hours

Follow with this

℞	gm or c c		
Bismuthi subnitratis	8	or	ʒii
Phenylis salicylatis	2		ʒss

M et fac chartulas 20 Sig One powder every two hours

Or this, if there is pain

℞	c c		
Tincturæ opii deodorati	5		flʒi
Spiritus chloroformi	10	or	flʒii
Acidi sulphurici diluti	25		flʒv
Vini pepsini (N F)	ad 100		fl℥iii

M et sig One teaspoonful in water every three hours

If there is vomiting use the following

℞	gm		
Hydrargyri chloridi mitis	05		gr i
Sodii bicarbonatis	1	or	gr xv
Sacchari	1		gr xv

M et fac chartulas 8 Sig One powder, given dry on the tongue, every hour till vomiting is controlled

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Cardiac Dilatations—C R Sowder, Indianapolis, in the *Central States Medical Monitor*, in an article on cardiac dilatations gives the following essentials of treatment First, absolute rest in bed is needed for a time followed by a life free from worry or excitement, and with moderate exercise, and good easily digested, nourishing food Strict attention must be given to the eliminative organs Second the drugs used are *digitalis* for the heart and strychnin and iron for the anemia If possible, of course, the cause of the dilatation must be removed

Pharmacology

PROBILIN

Report on Probilin by the Council on Pharmacy and Chemistry —With Comments

The following report has been submitted to the Council on Pharmacy and Chemistry by a subcommittee to whom Probilin was assigned (Pilulæ Probilinæ Dr W Bauermeister Goedecke & Co, Leipzig, Germany Schering & Glatz, New York, sole agents for the United States)

To the Council on Pharmacy and Chemistry —Probilin pills are said to be made according to a formula published by Dr W Bauermeister in *Therapeutische Monatschrift*, May, 1904 In a circular published by the American agents, Schering & Glatz, the statement is made that each pill contains 1½ grains of salicylic acid and acid sodium oleate The circular accompanying each package of Probilin reads as follows "They are a combination of salicylic acid with acid sodium oleate to which sufficient phenolphthalein and menthol have been added to stimulate the gastrointestinal tract mildly and to insure tolerance"

A more complete formula appeared in an article by Reynold Webb Wilcox, M D LL.D, of New York, in THE JOURNAL of the American Medical Association, Aug 4, 1906 Inasmuch as this article was reprinted, in a garbled form, and circulated by Schering & Glatz, and as they indicate, both in the body of the article and in the footnote, that the preparation referred to by Dr Wilcox was Probilin, one is naturally justified in assuming that the detailed formula as published by Dr Wilcox is the formula claimed by the manufacturers of the product or, at least, by their American agents This formula is as follows

Acid sodium oleate	1½ grains
Acid salicylic	1½ grains
Phenolphthalein	1 grain
Menthol	¼ grain

Mix and make into one pill

The active ingredients in the above formula would make a pill that would weigh approximately 275 mg or 4¼ grains, without the addition of any excipients, dusting powder or moisture But on weighing a number of Probilin pills, taken from an original package purchased in the open market, they were found to weigh approximately only 210 mg each While each of the four active constituents mentioned in the formula is soluble in alcohol, it was found that when Probilin pills were extracted with alcohol only 150 mg per pill would dissolve As this indicated a shortage of nearly 50 per cent and demonstrated that the published formula was not correct your committee deemed it of interest to the profession to determine the true composition of these pills Accordingly, Probilin pills were submitted to a chemist, who makes the following report, further emphasizing the falsity of the published formula

As per yours of December 22 we have made an analysis of Probilin pills bought in the open market by ourselves and find the approximate composition of each pill to be as follows

Phenolphthalein	008 gram
Sodium salicylate	010 gram
Sodium oleate and free oleic acid	100 gram
Menthol	010 gram
Moisture	006 gram
Dusting powder	065 gram

*The dusting powder seems to have been made up of lyco*podium licorice and charcoal

The results given while approximate are as close we believe as it is possible to make an analysis of this nature

The average weight per pill is 3 1/16 grains the heaviest of the dozen pills weighed was 3 [illegible]/16 grains, and the lightest 2 7/8 grains The bottle contained seventy pills

It is of course impossible to tell in a mixture of this kind whether the salicylic acid is positively free or positively combined The fact is that the alkali present is *sufficient approximately* to neutralize the acids found While the pill is normally acid in reaction the total acidity would correspond only to 1/6 of a grain of salicylic acid so that it will be seen that even if the entire acidity were attributed to salicylic acid it is not sufficient to account for the presence of the amount claimed in the formula without reference to the claim that it also contains an acid sodium oleate Since free salicylic acid reacts with sodium oleate to form sodium *salicylate and free oleic acid* we feel justified in concluding that the pill contains sodium salicylate sodium oleate and a small amount of free oleic acid. You will note that the total amount of material claimed in the formula of the circular is 4¼ grains of active constituents in each pill. You will note that the average weight of each pill as found by us is 3 1/16 grains; this includes one grain of the dusting powder which was actually separated and weighed and identified as to its general nature. If therefore this one grain is deducted from the 3 1/16 grains it will leave 2 1/16 grains for the active principles of the pill. From this also should be deducted the 1/8 of a grain of moisture, leaving less than 2 grains of medicinal ingredients, instead of 4¼ grains as stated in the formula.

This analysis was confirmed in all essential points by another chemist.

It is evident that Probilin, as at present marketed in this country, does not comply with Rules 1, 4, 6 and 8 of the Council. It is, therefore, recommended that Probilin be refused recognition. It is further recommended that this report be published in The Journal of the American Medical Association.

The report was adopted by the Council.

W. A. Puckner, Secretary.

COMMENTS

The above report is not creditable either to the manufacturer of this product or to the American agents, nor is it particularly gratifying to American physicians or pharmacists. Probilin seems to be an excellent example of a certain class of "made in Germany" nostrums, to which physicians have given altogether too liberal an endorsement, principally, perhaps, because it is not always easy to differentiate between the good and the bad products, which are advertised as having the endorsement of German scientists. The principal point in the above report is so simple that even a child could understand it. The active ingredients, according to the formula circulated by the American agents amount to 275 mg. or 4¼ grains per pill. The pill, as found on the market, weighs only 210 mg., of which only 150 mg. are active constituents. It is evident, therefore, that the pill can not contain what the formula calls for. In other words, if the formula for Probilin pills as given by Wilcox and published by Schering & Glatz is correct, the pills would weigh much more than they *do weigh*.

It is rather disconcerting to our pride as American physicians to note that this nostrum is evidently made especially for the American market, since careful research through German text books, lists of new remedies, price lists of German wholesale druggists, etc., fails to reveal any evidence that this preparation is used and recognized in the land of its origin. One naturally asks: Are German physicians too careful to be decoyed into the use of pills, which have an actual weight of only three fourths the amount of the active ingredients indicated by the published formula?

Another fact is worthy of mention. The American agents for Probilin lay great emphasis on the fact that these pills are difficult to prepare. This is unquestionably true, for if the formula as circulated by them is followed it is not only difficult but impossible to dispense them, since a soft, pasty mass would result, from which it would be impossible to make pills without the addition of other substances. It is, however, a simple matter to make pills having the composition of the Probilin pills as they are sold by Schering & Glatz. Neither will there be any difficulty in making the pills if the substances as recommended in German journals, only garbled accounts of which have been published in this country, are directed to be used. In this respect Probilin resembles Campho Phenique which was discussed in The Journal not long ago (April 20, 1907, p. 1365). In both instances an endeavor to compound the preparation from the formula furnished resulted in failure to produce anything like the product advertised.

In conclusion, there is another very important fact which Probilin illustrates. A physician, relying on false formulas furnished by proprietary medicine companies, is often led to false conclusions regarding the dosage and effectiveness of certain drugs. In prescribing Probilin he is led to believe that he is administering one grain of phenolphthalein to each pill when, according to the analyses, he is giving only one eighth of a grain. If, now, he desires to prescribe phenolphthalein in some other form he naturally follows the experience (?) which he thinks he has gained from its use in Probilin. He, therefore, orders phenolphthalein in doses based on the amount which he thinks he gave before, and thus gives eight times as much as he really had been giving in the form of Probilin. This is not only a hindrance to scientific progress, which is always based on truth, but it may lead to serious if not fatal injury. Aside, therefore, from the question of honesty or dishonesty on the part of the manufacturers, is the positively harmful influence on rational progress in medicine that results from deceptive and misleading statements regarding the quantities contained in various preparations.

The Active Principle of Ergot

A chemical and physiologic study of ergot has been carried out at the Wellcome Physiologic Research Laboratories by George Barker and H. H. Dale (*Bio-Chemical Journal*, 1907, ii, 240), which promises that the long search for the active principle of ergot may soon come to a successful end. Among the conclusions reached by these investigators are that the alkaloid ergotoxin represents the chief active constituent of ergot and that "clavin," recently exploited in Europe as a definite chemical body possessing the specific oxytocic action of ergot, but free from toxic effects, is a mixture of leucin and aspartic acid and is pharmacologically inert.

Since ergotoxin is insoluble in water the various aqueous extracts of ergot, ergotin, etc., as found on the market can contain but little of this alkaloid. As these aqueous extracts possess more marked pressor effect than can be accounted for by the small amount of ergotoxin present it is possible that ergot may contain a second stimulating principle. Barger and Dale conclude that of the physiologic effects described as characteristic of ergot, the alkaloid ergotoxin produces in very small dosage: (a) The effects ascribed by Kobert to sphacelinic acid, and by Jacobi to sphacelotoxin, viz.: Ataxia, dyspnea, salivation, gastrointestinal irritation, and gangrene. (b) The stimulant effect on plain muscular organs—in particular the arteries and the uterus—and the subsequent selective sympathetic motor paralysis given by many ergot preparations (Dale).

Ergotoxin ($C_{35}H_{41}O_6N_5$) is the hydrate of the crystalline alkaloid ergotinin (Tanret), $C_{35}H_{39}O_5N_5$. Ergotoxin is itself amorphous, but yields crystalline salts, and further differs from ergotinin in being very soluble in alcohol. Its most important difference, however, is its intense physiologic activity, ergotinin being but slightly, if at all, active when pure. Either alkaloid can readily be transformed into the other by chemical means.

In conclusion these investigators give their conception of the relation of the ergot alkaloids, ergotinin and its hydrate ergotoxin, to the various so called "active principles" obtained by other experimenters from ergot. They conclude as follows: The ecbolin and ergotin of Wenzell is a mixture of alkaloids containing cholin. The amorphous ergotinin of Tanret is an impure mixture of ergotinin and ergotoxin. The picrosclerotin of Dragendorff is ergotinin, possibly mixed with ergotoxin. The sclerocrystallin of Podwyssotski is ergotinin. Kobert's sphacelinic acid is an inactive resin with adherent alkaloid. The cornutin of Kobert is an alkaloidal resin, probably containing some ergotoxin, and also some other active substance, which may be a decomposition product of ergotoxin. The cornutin of Keller is an impure mixture of ergotinin with ergotoxin. Jacobj's chrysotoxin is an inactive yellow coloring matter with a small proportion of adherent alkaloid. The secalintoxin of Jacobj is a mixture of ergotinin and ergotoxin, while Jacobj's sphacelotoxin is impure ergotoxin. Hydroergotinin, recently isolated by Kraft, is identical with ergotoxin.

Obesity Cures

In prosecuting its work on the composition of certain secret remedies, the *British Medical Journal* (July 6 and 20) takes up the obesity cures. The advertisements of these remedies are more moderate in their claims than some other nostrum literature, for the reason that corpulence is so objective a fact that it will not do to make claims which would be speedily proved false. Still some remarkable statements are made, such as that a reduction can be noticed within twenty-four hours varying from 8 ounces to 3 pounds The constituents of such mixtures usually are extract of bladder wrack (*Fucus vesiculosus*) and citric acid In some the mixture of non official, and even non medicinal substances, with not well defined chemical characteristics, renders an exact determination of the composition impossible Antipon and Russel's Anticorpulent Preparation were found to contain nearly 40 grains of citric acid to the ounce Absorbit Reducing Paste consisted approximately of purified ox bile, 5 per cent, beeswax, 22 per cent, lard, 44 per cent, oil, 29 per cent, with a small amount of carmin and a trace of perfume J Z Obesity tablets contained sulphur, ginger, sugar and acacia Hughes and Hughes XL Reducing Pills were found to have approximately the following composition in each pill

Potassium iodid	0 15 grain
Iron phosphate	0 35 grain
Powdered ginger	0 2 grain
Powdered liquorice	0 1 grain
Extract of fucus vesiculosus	2 2 grains

Hughes and Hughes Reducing Lotion, which is to be applied locally to the part where fat has accumulated, consisted of about 0 08 per cent of an undetermined resinous substance, together with the following other ingredients

Potassium iodid	0 7 grains
Potassium bromid	13 5 grains
Potassium chlorid	6 9 grains
Glycerin	105 minims
Water to 1 fluid ounce	

As usual, the prices at which these remedies are sold are from 50 to 100 times the estimated cost of the ingredients

Correspondence

The Bactericidal Value of Some Widely Adverstised Antiseptics

PHILADELPHIA, Aug 2, 1907

To the Editor —I am much interested in the investigations of Drs Verhoeff and Ellis, reported in THE JOURNAL, June 26, in Messrs Parke, Davis & Co's reply thereto, and in what may be called your defense of the former in THE JOURNAL, July 27 1907, and it appears to me that Drs Verhoeff and Ellis have permitted themselves *to infuse an* unwarranted element into their experiments, which entirely justifies the *conclusion of Messrs Parke, Davis & Co, that* their "method of testing was faulty, and not at all comparable to the practical use of antiseptics"

Under all circumstances, experimental conditions should be made to approximate as near as possible the *natural state* under which the subject to be experimented on is to act, but in spite of this fundamental principle they inject an artificial condition into their experiments which neither they nor any one else have shown to exist in the natural state so far as my knowledge goes What proof have they to assume that the antiseptics which they employed, on being introduced into the body, encounter an overwhelming quantity of serum? None, so far as it appears What use is it, then, to take the fighting strength out of antiseptics by saturating them with hydrocele fluid, or serum albumin, which we know vitiates their action, before they are submitted to experiment? Why strangle their action at the very outset, and then draw the false deduction that they are practically inert and worthless? What would you think if any one would seriously propose to you the *saturation, or even the* mixing of peroxid of hydrogen with hydrocele fluid before applying it to a septic condition? I think I know your *answer* exactly

I hope it is needless to assure you that the "vested interests" to which you refer, *are of no concern* to me but I am mightily concerned whether our knowledge of, and faith in, our invaluable antiseptics which *have* been acquired by many years of patient toil, labor and money, should be despoiled by experiments which are faulty from their very inception?

After all is said and done the question remains, whether germicides, antiseptics, antiferments, antizymotics, etc, produce their beneficial influence solely through the virtue of their germ destroying property, or whether their fundamental action does not consist in depressing increased molecular or cell activity, which is incited by micro organisms and other agencies, and whether they do not hold this fundamental property in common with antipyretics, febrifuges, etc For a serious study of this whole field of therapuetics, forces the conviction that the action of these two groups of agents are closely affiliated in every particular, that antiseptics are in great part antipyretics, and that antipyretics are in great part antiseptics, and that, finally, the germ destroying power of both groups, while a valuable index as to the degree of their antiseptic or antipyretic activity, but no evidence whatever that this is their therapeutic function when administered in disease, may be merely an incidental manifestation of their power to interfere with, and inhibit all forms of cell activity and hence, to make a long story short, the fact that an agent which does not destroy germs within the body, is no proof that it is devoid of antiseptic *properties* THOMAS J MAYS

Commercialism and Food and Drug Adulteration

NEW YORK, Aug 15, 1907

To the Editor —I am glad Dr Bryant spoke in no uncertain terms regarding our need of honest drugs, in his presidential address before the American Medical Association at its recent meeting in Atlantic City For the last four or five months, as American correspondent of several medical journals published in Spain, Mexico, Central and South *America, I have* been telling the same thing to the physicians and druggists of Spanish *America, and also warning them about the loophole in the* new Food and Drugs Act, now in force here in the United States *since Jan* 1, 1907, by which (*a*) "Food products intended for export may contain added substances not permitted in foods intended for interstate commerce, when the addition of such substances does not conflict with the laws of the country to which the food products are to be exported, and when such substances are added in accordance with the directions of the foreign purchaser or his agent," (*b*) "the exporter is not required to furnish evidence that goods have been prepared or packed in compliance with the laws of the foreign country to which said goods are intended to be shipped," (*c*) "food products for export under this regulation shall be kept separate and labeled to indicate that they are for export," and (*d*) "if the products are not exported they shall not be allowed to enter interstate commerce" These are the provisions of Regulation 31, concerning the preparation of food products for export In consequence of this authoritative permission, all the impure food products, chemicals, drugs and pharmaceutical preparations not allowed for interstate commerce here in these United States of North America, are now being unjustly unloaded in the Spanish speaking countries not having laws to prevent it As a matter of curiosity, it would be instructive to compare that regulation with Regulation 32, concerning the requirements of food products and drugs when they are to be imported into these United States

A M FERNANDEZ DE YBARRA, M D

The Parabolic Reflector for Illumination of Test Types

SOUTH HAVEN, MICH, Aug 7, 1907

To the Editor —I take exception to the article with the above title in THE JOURNAL, Aug 3, 1907, page 383 It is evident that Dr Frank has left out of consideration the direct rays of light On page 384, from Figure 2, the following distances in feet are obtained

AD 3 25	AC 2 50	DF 2 31
FC 2 43	FA 3 99	FB 3 14

The direct illumination is approximately in the following proportion (3 99)2 at C, (3 14)2 at B, and (2 43)2 at A The direct illumination covers an angle of about 37 5 degrees and the indirect an angle of 225 degrees or six times the direct

Supposing the mirror to be nearly perfect, with little light lost by absorption, we get the following illuminating values:

$$\text{At B, } 6+1=7 \quad \text{At A, } 6+\frac{(2\ 43)2}{(3\ 14)2}=6\ 6 \quad \text{At C, } 6+\frac{(3\ 99)2}{(3\ 14)2}=7\ 62$$

This gives an excess of light at C over A of more than 15 per cent If Dr Frank will place an additional reflector below the test type at the corresponding angle he will have an illumination that is within 1 per cent of accuracy

Ben Webster

Sanguinaria in Eczema.

Royersford, Pa, Aug 8, 1907

To the Editor —For a number of years I have been using in my practice local applications of fluid extract of sanguinaria (Fluidextractum Sanguinariæ, U S P) in the treatment of obstinate cases of eczema It has given successful and gratifying results especially in the squamous and papular varieties of eczema It is well sometimes, in order to facilitate treatment, to puncture the papules with some sharp instrument

In cases of eczema secondary to varicose ulcers of the leg, "salt rheum," this remedy has been especially beneficial It is applied boldly, freely and persistently by repeated paintings of the part or by means of cloths, gauze etc, saturated with the solution, which may be used in varying strengths

The only literature which I have seen on this use of sanguinaria is in the U S Dispensatory, twelfth edition, where, under sanguinaria, it is stated that an infusion with vinegar has been found useful in obstinate cases of cutaneous diseases A somewhat similar note appears in the subsequent editions

I shall be pleased to learn of the experience, if any, of other physicians with this preparation in the treatment of eczema

J D Graber, M D

Jeweler's Eyeglass in Office Examination and Treatment.

Honolulu, T H, July 23, 1907

To the Editor —I take the liberty of bringing to the notice of the profession a little aid which I have found of great service, the jeweler's eyeglass or loupe One very readily acquires the ability to hold it in place, unconsciously, and I have found it of great value in epilation, searching for and removing foreign bodies from the cornea, etc. I have several glasses, but perhaps use a four inch most often It is surprising how often it will be of assistance about the office The other eye being free, one can readily pick up instruments without disturbing the glass, and at the same time can have both hands free for the work in hand

W L Moore.

Pollantin in Hay Fever

Louisville, Ky, Aug 2, 1907

To the Editor —I do not wish to stand in the position of exploiting new remedies, but the rather unfavorable comments on the new remedy "pollantin" in Dr Curtis' paper in The Journal July 13 prompts me to say a few words in regard to my experience with it. The first pollantin I used was obtained from Dr Dunbar direct, the year before it was placed on the market The case I used it on was a particularly intractable one of some twenty years' standing, accompanied with severe asthmatic seizures

The case is one of unusual interest and I desire to report it The following is a record made three years ago F H, aged 50, mulatto, a widow, with no children, had no venereal, drug or alcoholic history Her father died at the age of 76 years of senility Her mother is living, about 85 years old, suffers from occasional attacks of asthma during the winter, and has chronic bronchitis, but no hay fever The patient is of spare build fairly well developed, no bad habits, a hard working, industrious servant She had always enjoyed fairly good health up till 19 years ago when, as she says, she caught the hay fever and asthma by washing the soiled linen of a man who suffered from the disease Certain it is that she has suffered ever since from a very severe and intractable form of this trouble. The attacks begin each year about August 15, in a typical manner, There is itching and burning of the nose and eyes, with excessive secretion, which renders the skin very red and sore Asthmatic attacks are precipitated by heavy or cloudy weather or by eating after 3 p m Usually, after four or five days, she is compelled to take to bed and to remain from eight to sixteen weeks, for the disease persists till frost and it takes several weeks for the patient to gain strength sufficient to go to work On three occasions she has had a complicating pneumonia that nearly proved fatal I had seen this case for a number of years and had it in charge for the last five Almost every form of treatment had been employed without avail For the rest of the year the patient has no trouble and enjoys fairly good health On examination of the upper air passages before the attack, no local signs can be discovered The nasal passages are fairly spacious, though the turbinates are hypertrophied Two years ago, by the following plan of treatment, I was enabled partially to control the disease General tonic treatment commenced one month before the attacks Local treatment First, drop 1 5000 adrenalin solution in nose, second, douche chambers with warm saline solution, third, aboline ʒi, camphor, menthol, eucalyptol, āā gr v That season the patient was in bed only four weeks, the best she had done in eighteen years For the asthmatic attacks, stramonium was chiefly employed The next summer, on reading an abstract of Prof Dunbar's work at the Hygienic Institute at Hamburg, I wrote him for serum sufficient for a case and information as to where it could be purchased in this country The serum arrived about August 10, an odorless, pale yellow, impalpable powder, to be snuffed into nose and painted over conjunctiva as occasion demanded Treatment was commenced August 12, three times a day, in conjunction with the local treatment of the year before This controlled not only the symptoms of the hay fever but also the tendency to asthmatic seizures Thus, for the first time in nineteen years, the patient passed through the month of August able to be up and at work A mild attack of asthma, lasting four days, occurred September 1, and this was the only time lost during the whole season Whatever may be the general efficacy of this remedy it certainly controlled the disease in this particular case and I desired to report it, first, on account of its long duration and severity second, apparent history of contagion third absence of any other ocal disease, fourth, previous unavailing treatment by other methods and absolute control of the disease by the pollen antitoxin

The only addition I have made to this treatment is the hypodermatic injection of suprarenalin for the relief of asthma that occasionally comes on during the season This always controls the attacks, and as much as 15 minims of the 1 1,000 solution have been injected at one time without ill effects The patient now regards the hay fever season with comparative little fear and during the last four years has not spent over two weeks in bed on account of it My experience in this case gave me a very favorable impression of the new remedy and I have used it in many cases since and always with uniform satisfaction

The point which I want to urge, however, and which in my opinion is essential to success, is the shrinking of the tissues with suprarenalin preliminary to insufflation of the pollantin One of the earliest symptoms of the disease is a turgesence of the turbinated bodies, particularly the inferior turbinates which effectually block up the nose Under these conditions if pollantin is used it will be without benefit, for the swollen condition of the turbinals will prevent the entrance of the powder beyond the vestibule If the turbinals are first reduced, however, with a dilute solution of suprarenalin and the nose cleansed of its accumulated secretion, the powder can then be insufflated to the farthest recesses of the nasal chambers It can not be urged that these cases were benefited by the suprarenalin preparations alone because the relief was always greater when pollantin was used in conjunction

I do not regard it as a specific in the same sense that diphtheria antitoxin is considered. It does not constitute in my mind a single plan of treatment, but in conjunction with other remedies intelligently used it enables one to make these patients comfortable even during the height of the season

Gaylord C Hall.

Medical Fees—We spend about $5,000 on our medical education before we are entitled to practice, give five or six good years of our life to the study to qualify us, have to buy expensive books and instruments and even after all this, to keep pace with the advance of science, must go periodically to the centers of medical education and continually be expending money Surely a return in proportion is rightly expected—*Western Canada Medical Journal*

Miscellany

British Association for the Advancement of Science—The Alcohol Question—This association met at Leicester, July 31 The address to the physiologic section was delivered by its president, Dr Augustus D Waller, who discussed the action of anesthetics He referred to the attempts to determine the exact dosage of chloroform, and stated that he believes that in future death from chloroform will be considered an avoidable accident and that the frequency of such deaths will be diminished by a wider knowledge of the physiology of anesthesia Dr Waller described an apparatus by which a standard mixture of air and chloroform can be administered

In the discussion, Dr Frederick W Hewitt said that it is impossible to apply the method of exact percentages to the administration of chloroform and that in many cases it is also impossible to instruct students wholly in that method Individuality, he said, enters largely into the matter in practice, certain patients require a higher percentage of chloroform than others

In the same section, Dr A R Cushny, of the University of London, read a paper on the "Physiologic and Therapeutic Uses of Alcohol," in which he asserted that alcohol at times might increase the desire for food and encourage its digestion, but when moderation is departed from the whole digestive apparatus is disorganized This paper was received with much interest and was discussed by a large number of prominent medical men

Dr Waller said that there are many kinds of alcohol and that their effect on the tissues differs, and described experiments to prove his statement

Dr Rivers pointed out that there are two problems First, the determination of the effect, immediate or remote, after a single dose of alcohol, second, whether or not the continuous taking of alcohol as a habit has any effect on the ability to do muscular work He related some experiments and urged the necessity for more research work along this line He also said that on the mental side there is danger of the appearance of disturbing psychologic factors

Dr Dixon directed attention to the classification of alcohol as a poison, based on the results of experiments with protoplasmic tissue, and declared that he could similarly prove that distilled water, beef tea and caffein are poisons

Sir Victor Horsley said that the scientific examination of alcohol should be an accurate determination of its so called stimulating effects, and asked if such really exist, how soon the paralyzing and narcotic stage begins He declared that Dr Dixon's results can not be accepted until it is proved that the alcohol perfused through the tissues is used up He said further that the well known effect of alcohol in increasing the diastolic relaxation of the walls of the heart can not be regarded either as a stimulation effect or as an advantage to the circulation He referred to the finding of the physical deterioration committee, appointed by the House of Commons, that the first great evil socially is defective housing, and that the second is alcohol, and said that for patriotic reasons abstinence should be the aim and practice of all men The majority take alcohol for its pleasurable effects, and the only results are inefficiency, disease, poverty, crime and vice

Mr C J Bond exhibited a series of diagrammatic curves showing the diminished consumption of alcohol since 1845 and how it is intimately connected with the nation's commercial prosperity He also referred to its effects on the number of inmates in asylums

Dr Reid Hunt, Washington, D C, described a series of experiments on young guinea pigs to which small doses of a few cubic centimeters of 5 to 10 per cent alcohol solution were given in their daily food Four generations (over a period of two years) grew just as quickly, reached maturity as soon, and were just as fertile as those to which no alcohol was given There was never a symptom of intoxication, no loss of weight, and no pathologic changes The comparison, he said, was analogous to human beings who are moderate drinkers He said that no one seems to have discussed deeply the question of the increased tolerance for alcohol in the bodies of animals and men who had become accustomed to its presence An increased power is produced on the part of the body to oxidize alcohol In comparing sugar and alcohol, he stated that while sugar increases resistance to poison, alcohol lessens it Most probably, he said, the continued use of alcohol produces physiologic changes in the body, sometimes for good and sometimes for evil

Principles of Opsonic Theory—The following chart is the one to which reference was made in the article by Sir Almroth E Wright, in The Journal, Aug 10 1907, page 484 This chart was not received with the manuscript or in time to appear with the publication of the paper

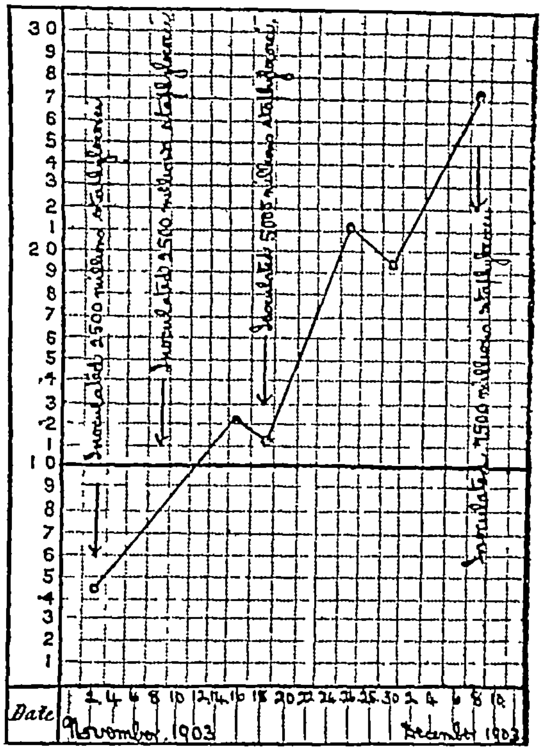

Fig 1—Immunization chart showing a typical illustration of the achievement of successful immunization

Relations of the Trifacial Nerve to Nasal Disease—C N Cox (*Long Island Medical Journal*, July), calls attention to the fact that irritation of one branch of this nerve can create disease at the seat of distribution of another branch of the same nerve Many cases of trifacial neuralgia may owe their origin, he declares, to suppuration of the accessory sinuses, although there may be extensive suppuration without any pain whatever If, however, pus be found coming from any accessory sinus, in a patient suffering from trifacial neuralgia, in whom other causes are not manifest, the evidence is presumptive of the sinusal origin of the disease No operation on the trifacial should be undertaken until disease of the accessory sinuses has been definitely excluded

Book Notices

Lateral Curvature of the Spine and Round Shoulders By Robert W Lovett M D Boston Associate Surgeon to the Children s Hospital Boston Illustrated Cloth Pp 187 Price $1 75 net Philadelphia P Blakiston s Son & Co 1907

Lovett's monograph on lateral curvature is in every way worthy of the attention of general practitioners, as well as of orthopedic specialists Lovett treats the subjects comprehensively, without giving unnecessary space to the consideration of minutiæ of interest solely to specialists The first chapter is devoted to the anatomy of the vertebral column and the thorax, which is presented in an interesting form, with a number of special cuts and tabulations The movements of the spine, illustrated with photographs of the living model as well as of the cadaver, showing the torso in various positions are then considered The mechanism of scoliosis, with cuts showing the results of experimental curvatures produced on animals and the description and symptoms and pathology of the condition are described as is also the examination and methods of making records Etiology and the influence of school conditions, frequency of occurrence, diagnosis, prognosis and treatment are successively considered, each chapter being freely illustrated.

Poisons Their Effects and Detection By Alexander W Blyth M R C S., etc. and Meredith W Blyth B A (Cantab) etc. Fourth Edition Thoroughly Revised Illustrated Cloth Pp 772 Price $7 50 net London Charles Griffin & Co New York D Van Nostrand Co 1906

This work has been expanded in some parts and condensed in others, obsolete processes being left out and the more modern and exact methods introduced The history of poisoning is given in an interesting introductory chapter and this is followed by Part II which gives the general considerations of definition, classification, and modes of search The rest of the work is devoted to the consideration of the specific poisons The treatment is thorough, the symptoms and considerations which are of importance for the practitioner being given with especial fulness A large amount of space is given to the poisons of animal origin such as ptomains, adnephrin, disease toxins, etc An account of food poisoning is introduced and in other respects the book is brought fully up to date

Atmokausis und Zestokausis Die Behandlung Mit Hochgespanntem Wasserdampf in der Gynaekologie By Dr Ludwig Pincus Frauenarzt in Danzig Zweite Verbesserte Auflage Mit 33 Textfiguren und Tafeln Paper Pp. 371 Wiesbaden Verlag Von J F Bergmann 1906

The devotion of a volume of 370 pages to a process comparatively little known in this country should attract the attention of American gynecologists In this second edition the author has made several changes in the direction of improving the work The general part has suffered very little change, but in the special part some chapters such as that on gonorrheal endometritis have been omitted, while others have been rewritten The book has now the character of a text book and it should prove a useful guide to an important therapeutic procedure.

Anesthetics Their Uses and Administration by D W Buxton M.D B S Member of the Royal College of Physicians Fourth Edition Cloth Pp 415 Price $2 50 net Philadelphia P Blakiston's Son & Co 1907

Dr Buxton's authoritative manual has been revised and much of it rewritten Special forms of apparatus for the dosimetric administration of chloroform are described in detail, and the subjects of general anesthesia by ethyl chlorid and anesthesia by spinal injection are fully considered

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION CONTRACT PRACTICE INSURANCE FEES MEDICAL LEGISLATION, ETC.

Prosecution of Quack Doctors.

The *Ohio State Medical Journal* (August 15) gives an interesting account of how advertising quacks are put out of business in Clark County Ohio Announcing himself as Professor Ellsmere the world's greatest clairvoyant, palmist and healer, an individual recently began advertising in the newspapers of Springfield, Ohio The legislative committee of the Clark County Medical Society promptly called on him and informed him he must leave Clark County or he would be prosecuted for illegal practice of medicine By the next day the professor had departed in search of a field not having a county society with an alert legislative committee

Old Insurance Fees Restored

The Union Central, the Equitable and the Fidelity mutual life insurance companies have recently advanced their medical examination fees to $5 Three weeks ago we noted the fact that the Mutual Life Insurance Company of New York had done likewise We hope soon to be able to record the fact that all the standard companies have restored their medical examination fees

Queries and Minor Notes

Anonymous Communications will not be noticed Queries for this column must be accompanied by the writer's name and address but the request of the writer not to publish name or address will be faithfully observed

DIAGNOSIS IN DIARRHEA OF OBSCURE CAUSE

Rutledge Tenn Aug 8 1907

To the Editor —Please state in The Journal the best treatment for the following condition Man aged 31 weight, ten years ago, 170 pounds, has had for the last nine years a constant diarrhea which seems to appear periodically every three days with at times between no movement at all unless from a purgative Up to the first appearance of the malady he was in good health a very hearty eater and never had had typhoid or flux He says that the condition started up just after being sick with la grippe Green fruits of any kind are not digested He has a cough which appears every morning on getting up and continues until after breakfast then subsides There is no history of tuberculosis Very often he vomits his breakfast. He eats dinner and supper with great heartiness and retains them He sleeps well T D Cloyd M D

Answer A complete diagnosis of the case should first be made by examination of stomach contents after a test meal and by careful macroscopic and microscopic examination of the feces during the period of diarrhea and also after administering the test diet of Schmidt The fermentation test of Schmidt may throw some light on the nature of the changes which produce the diarrhea An opinion may be formed by taking the reaction of the feces and observing their odor If the reaction is acid and the odor sour but not putrid we may assume that there is fermentation of carbohydrates with production of fatty acids on the other hand if the reaction is alkaline and the odor putrid decomposition of blood mucus, or albuminous food residues has taken place and the irritating products are probably the cause of the diarrhea The feces should be tested for occult blood, meat having been excluded from the diet for two days If mucus be found in the passages colitis may be assumed to be present and if blood or pus is present ulceration has probably occurred The seat of the colitis or ulceration must be determined by physical examination and a consideration of the symptoms If the mucus or pus is voided separately from the feces proper the seat of the disease is probably in the lower part of the bowel and in any case digital and ocular examination of the rectum should not be omitted The case may be one of fragmentary constipation described by Boas The treatment should be determined largely by the results of the examinations If intestinal putrefaction is shown by the reaction and fermentation tests a diet containing little proteids and a larger amount of carbohydrates should be prescribed Meat should be temporarily excluded from the diet and milk should be used freely or exclusively All irritating substances should be excluded from the diet and if practicable a considerable amount of fat should be taken to render the feces bulky and slippery The details of the dietetic treatment and the medicines appropriate to the condition can only be determined after a careful diagnosis has been made It is unwise to prescribe drugs in such a case until we know what is the matter

CUSHING'S METHOD OF USING LOCAL ANESTHESIA IN HERNIOTOMY

Niagara Ky Aug 9 1907

To the Editor —In The Journal July 20 Dr James F Mitchell in an article on "Local Anesthesia in General Surgery refers to Cushing's method of herniotomy Please publish the technic of this procedure in The Journal.

R H Moss

Answer —In the *Annals of Surgery* vol xxxi, p 1 is an article by Dr Harvey Cushing of Baltimore on The Employment of Local Anesthesia in the Radical Cure of Certain Cases of Hernia with a Note on the Nervous Anatomy of the Inguinal Region Dr Cushing's is not a new method of performing herniotomy but a new method of rendering the inguinal region anesthetic for the performance of any variety of hernia operation when the administration of a general anesthetic for any reason does not seem advisable. In this article the sensory nerves of the region are carefully studied the peripheral areas of distribution mapped out and the course of the trunks and branches illustrated and described. The idea is to anesthetize the line of incision through the skin by injecting Schleich's solution cut down on the nerve trunks and cocainize them after which the operation may then be completed without pain The steps of the operation as described by the author are condensed as follows

It has been the custom to administer hypodermically 1/10 or 1/8 of a grain of morphin three-quarters of an hour before and to repeat this shortly before the operation The skin in the line of the proposed incision is infiltrated with Schleich's cocain solution and the incision may be immediately made through the linear wheal thus produced

It is unnecessary and useless to attempt to anesthetize the pan niculus If, however, throughout its whole length this incision is carried down to the aponeurosis unanesthetized fibers of the iliohypogastric will be encountered in the superficial fat at the lower angle, together with one or two large veins division of which is painful, so that anesthetization of the panniculus layer is here necessary, or else, as has been done on several occasions, the incision only at the upper angle may be carried down to the aponeurosis which is then opened in the line of fibers from the external ring and the iliohypogastric and inguinal nerves immediately cocainized with a 1 per cent. solution as they lie under it After this procedure the lower angle of the incision may be painlessly carried down to the external ring and the remaining intercolumnar fibers of the aponeurotic insertion divided Under ordinary circumstances there is no further need of the anesthetic, as we are working in an area freed from all sensation

The combined ilioinguinal and genital nerve which has been cocainized at the outer limit of its exposure is now reflected to one side or the other, care being taken not to divide it, since this leads apparently to a more or less permanent paralysis of the cremaster, which is to be avoided The remainder of the operation, the exposure of the sac and cord after a longitudinal division of the infudibuliform fascia, the amputation of the sac at its neck, and closure of the peritoneal opening the excision of the fundus of the sac, division of the cord and castration, if deemed advisable, may now be done practically without pain The closure of the parietes by any of the more commonly employed methods may now be painlessly accomplished

It occasionally happens during the operation, whether from slight ability on the patient s part to endure discomfort or from the accidental division of some sensory fibers that what inhibition toward pain he at first may have possessed becomes exhausted and recourse must be had to a general anesthetic

Under these circumstances it has been found that a few inhalations of chloroform—not enough, however to make the patient lose consciousness—are sufficient to tide him over the most difficult parts of the operation

The method of anesthesia which is employed may justly be spoken of therefore as a morphin cocain chloroform combination, the first and last drugs being merely adjuvants of the local anesthetic which in many cases suffices alone

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COMPOSITION OF GONOCOCCIDE

Chicago, Aug 1, 1907

To the Editor —Can you give me any information about the composition of the preparation known as "Gonococcide, sold by Cox Chemical Co Chicago? The circular accompanying the package gives the following formula

C_8H_8BrNO monobromacetanilid, $C_{10}H_{14}N_2C_7HO_3$ eudermol, $CaSo_32H_2O$ gypsum and selenite, $CaSo_4$ anhydrite, H_2O aqua and myrrh

Note —In combining calcium coral with sulphuric acid, calcium occurs as gypsum selenite and anhydrite

The literature of eudermol limits the usefulness of that drug to skin diseases W H

Answer —Gypsum, selenite and anhydrite are the names applied to different forms of calcium sulphate Gypsum and selenite are chemically identical, being calcium sulphate and containing two molecules of water crystalization, $CaSO_4+2H_2O$, but differing in crystaline form Anhydrite is also calcium sulphate but contains no water of crystalization The inclusion of three different forms of the same substance should be sufficient to demonstrate the fakiness' of the formula. The first substance named monobromacetanilid, has been used as an antiseptic under the trade names antisepsin and asepsin It is practically insoluble in water, and hence but little of it can be contained in the preparation Eudermol is a name given to nicotin salicylate and its use externally has been recommended in scabies, chronic eczema and other skin diseases This being practically the only medicinal constituent given in the formula, its determination in gonococcide was taken up in the Association laboratory Tests, however, failed to show the presence of this or any other alkaloid While the addition of iodin to a 0 1 per cent nicotin salicylate solution produces an abundant precipitate, the addition of iodin to a specimen of gonococcide produced no reaction whatever Further comment on the formula seems to be unnecessary

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HOW FAR X RAY PICTURES MAY AID IN TREATMENT OF MULTIPLE FRACTURES OF FEMUR

Detroit Aug 6 1907

To the Editor —X-ray shadows may be useful in two ways (a) By giving us some detailed knowledge of the degree of damage—comminution laceration and complication—incident to the broken femur which may not have been determined by inspection touch and manipulation (b) They may intrench us more securely before a jury But is the knowledge thus obtained of more value in the treatment of the case than that obtained by a strict estimate by touch and manipulation of the resistance of the broken and torn tissues to the restraining devices—splint etc ? There is a manifest tendency in some quarters to employ the Roentgen pictures as a routine practice in these fractures and I would like to have some one tell the readers of The Journal what he thinks the rule should be H C Wyman

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PRESCRIBING OF PHOSPHORUS

Hamburg, Ark, Aug 12, 1907

To the Editor —Will you please criticise the following prescription and answer under Queries and Minor Notes whether or not the prescription is entirely safe and compatible?

℞	Quininæ hydrochloratis	ʒi
	Nucis vomicæ	flʒvi
	Spiritus phosphori (N F)	flʒiv
	Elixir aromatici q s. *ad*	fl℥viii

M. Sig One teaspoonful in water three times a day

W S Norman

Answer The prescription which you submit makes a fairly satisfactory preparation The only objection to be made is the inclusion of spirits of phosphorus The tendency of phosphorus to go into combination is so marked that the free phosphorus contained in the mixture will react with constituents of the same to form a compound of phosphorus If your purpose is to give phosphorus it would be preferable to give it alone—as, for instance the phosphorus pill of the U S Pharmacopeia

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SOME RECOVER FROM HAY FEVER

Marceline Mo, Aug 12 1907

To the Editor —Are there any records of recovery from hay fever in patients who have had the disease several years? Of course many patients move to a different climate and escape the attacks, but I have never known a patient to recover in this state

Ola Putman

Answer —Our correspondent is right in viewing hay fever as a most stubborn disease annually recurring and generally resisting treatment Change of climate may result in prompt cure But there are some patients who without change of climate with merely the ordinary local and symptomatic treatment, gradually outgrow their susceptibility and apparently acquire an immunity, they are able to live in the same place, amid the same surroundings, and are still free from the recurring attacks The experience of many physicians who have had the opportunity of treating a large number of cases of hay fever will bear out this statement

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The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U S Army, for the week ending Aug 17, 1907

Cowper, Harold D, asst. surgeon, granted one month s leave of absence with permission to apply for two month s extension

Keefer, Frank R, surgeon to accompany Ninth Infantry from Presidio of Monterey, Cal, with troops in field

Ives Francis J, surgeon, to accompany Ninth Infantry from Presidio of San Francisco to Fort Sam Houston, Tex

Bartlett, C J asst surgeon, left Cuba en route to the United States on thirty days leave of absence

Nichols, Henry J, asst surgeon is detailed as a member of board of medical officers for studying tropical diseases as they exist in the Philippine Islands, vice Craig, Charles F, asst surgeon U S Army, hereby relieved

Vose William L asst surgeon, relieved from duty in the Philippine Islands, to sail from Manila, P I, about Oct 15, 1907, for San Francisco, and on arrival report by telegraph to the Adjutant General of the Army for further orders

Banister William B, surgeon, detailed member of the examining board at Manila, P I, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion or advancement vice Captain Thomas S Bratton asst. surgeon U S Army, hereby relieved

Field, Peter C, asst surgeon, ordered to accompany Troops F and G, Fourth Cavalry, from San Francisco to Fort Snelling Minn and then to proceed to and take station at Fort Wayne Mich

Kirkpatrick, Thomas J asst surgeon granted one month and eleven days sick leave of absence Relieved from treatment at the Army General Hospital Washington Barracks, D C, to take effect on the expiration of the sick leave of absence, and will proceed to join his proper station

Byrne Charles B, asst surgeon general ordered to report in person to commanding general Department of the East Governor s Island N Y for duty as chief surgeon of that department

Davis, William B deputy surgeon general relieved from duty as chief surgeon, Department of the East and ordered to report in person to the commanding general Department of the Missouri Omaha for duty as chief surgeon of that department

Banister, John M deputy surgeon general relieved from temporary duty as chief surgeon Department of the Missouri, Omaha and to return to station, Fort Riley Kan

Davis William L, deputy surgeon general Richard Charles surgeon appointed members of an army retiring board to meet at Governor's Island New York

Krebs Lloyd Le R asst surgeon, granted leave of absence for one month, effective Sept 1, 1907

Halloran Paul S asst surgeon, granted one month and fifteen days leave of absence

Chamberlain George F contract surgeon ordered from South Newbury Vt to Fort Walla Walla Wash for duty

Barney Fred M contract surgeon granted leave of absence for one month

Phelan Henry du R contract surgeon, left transport *Crook* and arrived at Fort Baker, Cal, for duty

Hutson T Ogier contract surgeon ordered from Fort Moultrie, S C to the Army and Navy General Hospital Hot Springs Ark., for treatment

Hammond, William G., detail surgeon ordered to visit in succession Whipple Barracks Ariz Fort Huachuca Ariz Fort Apache, Ariz and Fort Wingate N M for professional duty

McAlister John A dental surgeon ordered from Fort Wayne, Mich., to Fort Brady, Mich for duty

Navy Changes

List of Changes in the Medical Corps, U S Navy for the week ending Aug 17 1907

Hough E P W, acting asst. surgeon ordered to naval hospital, Annapolis Md.

Stuart A., P A surgeon, detached from command of the naval hospital Sitka Alaska and ordered home to await orders

Grieve C C, P A surgeon detached from the navy yard Portsmouth N H August 31, and ordered to command the naval hospital Sitka Alaska.

Owens W D asst surgeon, ordered to the navy yard Portsmouth N H and to additional duty on the *Southery* August 21

Taylor E. C P A. surgeon detached from duty at the navy recruiting station Memphis Tenn and ordered home to wait orders

Zalesky W J P A. surgeon, ordered to the navy recruiting station Memphis Tenn

Biello J A., ordered to the naval hospital Philadelphia.

McMahon J, pharmacist detached from duty at the navy yard, New York N Y and ordered to the naval hospital Norfolk Va.

Lung G A., surgeon *detached from* the *Kentucky* and ordered home to wait orders

Alfred A. R. surgeon detached from duty at the navy recruiting station Pittsburg Pa and ordered to the *Wolverine*

Stoops R. E asst. surgeon ordered to the navy recruiting station Pittsburg Pa

Grunwell A. G surgeon detached from the *Wolverine* and ordered to the *Kentucky*

Melhorn K. C., acting asst. surgeon, ordered to the naval hospital, Norfolk, Va.

Blakeman R S P A. surgeon discharged from treatment at the naval hospital Norfolk, Va.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and non commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Aug 14 1907

Geddings, H. D asst surgeon general directed to proceed to Ellis Island, N Y., for special temporary duty on completion of which to rejoin his station in Washington D C.

Cofer, L. E., P A. surgeon granted leave of absence for one month

Grubbs S B P A. surgeon, granted leave of absence for one day Aug 11 1907

Francis Edward, P A surgeon directed to proceed to Mobile Ala. for special temporary duty on completion of which to rejoin his station at Mobile quarantine station

Collins G L. asst. surgeon granted leave of absence for one day, Aug 16 1907

Olsen F T., asst surgeon granted leave of absence for one month and twenty eight days from Aug 18 1907

Miller W W asst. surgeon relieved from duty at Ellis Island N Y., and directed to report at the Bureau in Washington for temporary assignment in the Hygienic Laboratory

Gibson L. P acting asst surgeon granted leave of absence for eight days from Aug 8 1907

Gustetter A L acting asst. surgeon, granted leave of absence for thirty days from Sept 1 1907

Hunter S B acting asst. surgeon, granted leave of absence for six days, from Aug 7 1907

McGinnis R H acting asst surgeon, granted leave of absence for thirty days from Sept 1 1907

Nute A J acting asst surgeon, granted leave of absence for twenty days from Aug 20 1907

Rodman John C acting asst-surgeon granted leave of absence for three days from Aug 8 1907

Safford M V acting asst surgeon granted leave of absence for four days, from July 15 1907 on account of sickness

Safford M V acting asst surgeon granted leave of absence for four days from Aug 8 1907 under Paragraph 210 Service Regulations.

Simonson G T., acting asst. surgeon, granted leave of absence for ten days from Aug 5 1907

Walkley W S acting asst. surgeon granted leave of absence for six days from Aug 18 1907

PROMOTIONS

Stimson A M Rucker W C and Ward W K asst surgeons commissioned as P A. surgeons, to rank as such from July 27 1907

Trask J W asst surgeon commissioned as P A surgeon to rank as such from Aug 16 1907

APPOINTMENTS

Drs. Charles W Chapin Edward R Marshall Raymond B Scofield and Emil Krulish commissioned (recess) as asst surgeons in the Public Health and Marine-Hospital Service, Aug 8 1907

Health Reports.

The following cases of smallpox yellow fever cholera and plague have been reported to the Surgeon General Public Health and Marine Hospital Service during the week ended Aug 16 1907

SMALLPOX—UNITED STATES

California Los Angeles July 20-27 1 case

Indiana Elkhart, July 27 Aug 3 1 case Indianapolis, July 26-Aug 4 2 cases

Louisiana Shreveport July 27 Aug 3 3 cases.

Missouri St Joseph, July 27 Aug 3 1 case.

New Jersey Newark July 27 Aug. 3 3 cases

New York New York July 20 27 1 case 1 death.

Wisconsin Milwaukee, July 27 Aug 3 2 cases

SMALLPOX—FOREIGN

Africa East London June 29 July 6 1 case (imported)

Argentina Rosario May 1 31 10 deaths

Austria Vienna July 13 20 1 case 1 death

Canada Halifax July 27 Aug 3 3 cases

China Manchuria June 29 July 6 2 cases

Ecuador Guayaquil July 6 20 2 deaths

France Paris July 13 20 15 cases, 2 deaths

Greece Piraeus July 20 27 1 case

India Calcutta June 22 29 2 cases

Italy July 11 18 14 cases

Java Batavia June 22 29 8 cases

Mexico Aguas Calientes July 27 Aug 3, 2 deaths

Portugal Lisbon July 13 20 6 cases

Russia Moscow, June 29 July 20 11 cases, 4 deaths Riga, July 13 27 4 cases.

Siberia Vladivostock June 4 14 2 cases

Turkey Bagdad June 22 29 present Bassorah, June 29 July 6 present Constantinople, July 14 21, 2 deaths.

YELLOW FEVER

Cuba Alacranes Aug 9, 1 case Cienfuegos Aug 3 14 14 cases 1 death (9 cases among American troops) San Nicolas, Aug 8, 1 case.

CHOLERA

India Calcutta June 22 29 68 deaths, Kashmir June 22 29 840 cases 723 deaths.

Straits Settlements Singapore June 8 15 2 deaths

PLAGUE—UNITED STATES

California San Francisco Aug 12 14, 3 cases, 1 death

PLAGUE—FOREIGN

Australia Brisbane May 26 June 8 3 cases, 1 death Ipswich May 23 1 case 1 death Sydney May 25 June 1, 1 death.

China Amoy June 22 29 1 case 1 death

India Calcutta June 22 29 28 deaths

Peru Callao June 27 2 cases 1 death Chiclayo June 27, 6 cases 3 deaths Mollendo June 27 4 cases Paita June 27, 3 cases, 2 deaths Trujillo June 27 22 cases 5 deaths.

Russia Odessa, July 14 1 case 1 death

Marriages

William Rightman, M.D, to Miss Toba Fagin, both of Chicago, August 6

Henry Harrison, M D, to Miss Frances L. Tripp, both of Detroit, Mich, August 6

George Albert Gardner, M.D, to Miss Charlotte Thayer both of Chicago, August 14

Rosco C Waterbury, M D, Kinderhook, N Y, to Miss Ada Wild, of Albany, N Y, August 6

Arthur H. Cooper, M.D, Superior, Wyo, to Miss Nettie Ansell of Washakie, Wyo, recently

Roy Bishop Canfield, M D, Ann Arbor, Mich, to Miss Lelia M Harlow of Boulder, Colo, August 6

John J Moren, M D, Louisville, Ky, to Mrs Ferda Zorn Norton of Vineyard Haven, Mass, recently

Henry Paine Stevens, M D, Cambridge, Mass, to Miss Emma Frye of Lewiston, Maine, August 7

James Owen Callahan, M D, to Miss Stella May Hardin, both of Muskogee, I. T, at Arcadia La, August 6

Deaths

Henry E Cushing, M.D Chicago Medical College, 1884, a member of the American Medical Association, a practitioner of Champaign County, Ill., for 23 years, division surgeon to the Illinois Central Railroad, a man universally esteemed and respected, a practitioner standing for high ideals, uncompromising and unswerving in his attitude toward quackery and irregularities in practice, died at his home in Champaign, Ill, August 11, from pleuro pneumonia, after an illness of five days, aged 52 At a special meeting of the Champaign County Medical Society, held August 11, resolutions of sorrow and sympathy were unanimously adopted.

Donald Macrae, M.D, L.R C P., Edinburgh, 1861, a member of the American Medical Association, once president of the Iowa State Medical Society, president of the Council Bluffs (Iowa) Medical Society, vice president of the surgical section of the Eleventh International Medical Congress, formerly president of the Missouri Valley Medical Society, professor of railway and clinical surgery in the University of Nebraska College of Medicine, Omaha, a member of the staff of the Council Bluffs General Hospital, and one of the leading surgeons of Iowa, died at his home in Council Bluffs, August 14

FAILED

Medical College of Alabama	(1907)	2
Atlanta College of P and S	(190)	1
Louisville Medical College	(1906)	1
Hospital College of Medicine Louisville	(1906)	2
Kentucky University	(1904)	1
Harvey Medical College	(1905)	1
Tulane University of Louisiana	(1 1904), (, 1907)	4
Flint Med Coll	(1, 1903), (1, 1904), (1, 1905), (4, 1907)	7
Baltimore University	(1904)	1
University of Mississippi	(1900)	1
Mississippi Medical College	(1907)	11
St Louis College of P and S	(1896)	1
Washington University St Louis	(1904)	1
Leonard Medical School	(1907)	1
Memphis Hospital Medical College	(2 1903), (2, 1905) (1 1906) (13 1907)	18
University of Nashville	(1, 1902), (1, 1906), (4 1907)	6
University of Tennessee	(1901)	1
College of P and S Memphis	(1907)	2
University of the South	(1906)	1
Knoxville Medical College	(1906)	1
Chattanooga Medical College	(1905)	1
Meharry Medical College	(1, 1903), (3, 1906), (4, 1907)	8
Gate City Medical College	(1906)	1

Connecticut Homeopathic July Report—Dr E C M Hall, secretary of the Homeopathic Examining Board of Connecticut, reports the written examination held at New Haven, July 9, 1907 The number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 2, both of whom passed. The following colleges were represented

PASSED

College	Year Grad	Per Cent
Boston University	(1907)	89
New York Homeo Medical College	(1906)	89

Connecticut July Report—Dr Charles A Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven July 9 10, 1907 The number of subjects examined in was 7, total number of questions asked, 70, percentage required to pass, 75 The total number of candidates examined was 34, of whom 29 passed and 5 failed. The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Yale Med School	(1904) 88 4, (1905) 84 7, (1906) 82 5, (1907)	77 1 79 4, 79 5, 79 7 81 9 81 9, 81 9, 82 4, 83 4, 83 9 86 86 9, 89
College of P and S Baltimore	(1907)	82
Maryland Medical College	(1906) 81 4, (1907)	77 3
University of Maryland	(1907)	82 1
Harvard Medical School	(1905)	79 9
Tufts College Medical School	(1905)	77 2
Coll of P & S N Y	(1893) 78 2, (1895) 80 9, (1905)	78 1
Long Island Coll Hospital	(1907)	79 7
Jefferson Medical College	(1905) 83 1, (1906)	77
University and Bellevue Hosp Med Coll	(1907)	82 8

FAILED

University of Maryland	(1907)	73 2
Baltimore Medical College	(1907)	73 1
Maryland Medical College	(1907)	61 8
College of P and S Boston	(1906)	54 2
University of Messina, Italy	(1905)	20 3

Missouri July Report—Dr J A B Adcock, secretary of the Missouri State Board of Health, reports the written examination held at Mexico, July 9-11, 1907 The number of subjects examined in was 12, total number of questions asked, 90, percentage required to pass, 75 The total number of candidates examined was 21, of whom 9 passed and 12 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Northwestern Univ Med School	(1904)	82
Rush Medical College	(1906)	80
University of Louisville	(1907)	78
University Med Coll Kansas City	(1907)	76
Washington University, St Louis	(1907)	75
Barnes Medical College	(1907)	75
St Louis University	(1906) 77 (1907)	82
University College of Med, Richmond	(1895)	75

FAILED

American Coll of Med and Surg, Chicago	(1907)	72
St Louis Coll of P and S	(1906) 60 (1907)	66 66, 73
American Med Coll St. Louis	(1907)	71, 72
Washington University St Louis	(1907)	70
University Med Coll Kansas City	(1907)	70 72
Barnes Medical College	(1907)	60, 72

Colorado July Report.—Dr S D Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 2, 1907 The number of subjects examined in was 8, total number of questions asked, 80, per centage required to pass 70 Eighty-seven candidates were licensed at this examination, 32 of whom passed the examination and 46 were registered on presentation of satisfactory credentials Final action regarding those who failed will not be taken until the October meeting of the board The following colleges were represented

PASSED

College	Year Grad	Per Cent
Denver and Gross Coll of Medicine	(1907)	71 5, 72 1, 77 4 78, 79 3 79 6, 82 5, 82 8, 83 1
Colorado School of Medicine	(1907)	72 8, 73 6, 75 8, 76, 77 2, 77 8 78, 78 3 78 5, 78 7, 80 1 84 1
Denver Homeo Med College	(1907)	73 7, 76 3, 76 3 77 5 78 1
Rush Medical College	(1906)	74 2
Northwestern Univ Med School	(1907)	78 1, 81 1
Indiana Medical College	(1907)	77 7
St Louis University	(1907)	77

REGISTERED ON CREDENTIALS

Columbian University, Washington	(1900)
Birmingham Medical College	(1898)
College of P and S, Chicago	(1902)
Northwestern University	(1886), (189) (1894), (1900)
Rush Medical College	(1896), (1901), (1907)
Dunham Medical College	(1902)
Illinois Medical College	(1897)
Hahnemann Medical College, Chicago	(1888), (1890)
American Med Miss Coll	(1906)
Medical College of Indiana	(1884)
Keokuk Medical College	(1891)
University of Iowa	(1894), (1905)
University of Louisville	(1887)
Kentucky School of Medicine	(1892)
University of Maryland	(1902)
Maryland Medical College	(1904)
Baltimore University	(1898)
Boston University	(1885)
University of Michigan	(1878)
Missouri Medical College	(1886)
St. Louis University	(1906)
Barnes Medical College	(1906)
St. Louis College of P and S	(1903)
Central Medical College	(1898)
Ensworth Medical College	(1904)
Washington University St Louis	(1906)
Medical College of Ohio	(1880), (1887)
Cleveland Homeopathic Med Coll	(1884), (1893)
American Eclectic Med Coll, Cincinnati*	(1887)
Miami Medical College	(1906)
Ohio Medical University	(1904)
Jefferson Medical College	(1871), (1905)
University of Pennsylvania	(1890)
Hahnemann Medical Coll, Philadelphia	(1886)
Vanderbilt University	(1893)
University of Tennessee	(1891)

*This college became extinct in 1896

Society Proceedings

COMING MEETINGS

Ohio State Medical Association Cedar Point August 28
Medical Society of the Missouri Valley Council Bluffs Iowa Sept 5
Washington State Medical Association, Seattle September 10 12
Colorado State Medical Society, Glenwood Springs Sept 17 19
Amer Assn of Obstetricians and Gynecologists Detroit Sept 17 19
American Electro Therapeutic Assn Boston Sept 17 19
Medical Society of the State of Pennsylvania Reading Sept 23 26
Southern Medical Association, Birmingham, Ala Sept 24 26
Amer Acad of Ophthal and Oto Laryng Louisville Sept 26 28
American Public Health Assn Atlantic City Sept 30 Oct 4
Medical Assn of District of Columbia, Washington, Oct. 1
American Roentgen Ray Society Cincinnati, Oct 2 4
Idaho State Medical Society, Boise Oct 3 4
Delaware State Medical Society Wilmington, Oct. 8
Nevada State Medical Society Reno Oct. 8 9
Mississippi Valley Medical Association Columbus O, Oct 8 10
Vermont State Medical Society, St Johnsbury, Oct 10 11

OREGON STATE MEDICAL ASSOCIATION

Thirty third Annual Session, held at Seaside, July 12 13, 1907

The President, Dr E B Pickel, Medford, in the Chair

Officers Elected

The following officers were elected to serve during the ensuing year President, Dr R C Coffey, Portland, vice presidents, Dr N Molitor, LaGrande, Dr M Rosenburg, Prineville, Dr A C Seeley, Roseburg, secretary, Dr William House, Portland, treasurer, Dr Edna Timms, Portland, councilors, Dr C J Smith, Pendleton, and Dr E J Labbe, Portland, delegate to the American Medical Association, Dr Andrew C Smith, Portland, alternate, Dr W T Williamson, Portland

Secretary L H Hamilton reported that the association is composed of nine component societies, with a membership of 356

Chronic Amebic Dysentery, a Surgical Disease

Dr John Milton Holt, U S P H and M-H S, Astoria, said that after the dysentery had continued one year, with lesions above the sigmoid, and resistent to colonic irrigations, and the patient in as good a condition as would be required for appendectomy, the condition is a surgical disease Water is the principal source of infection, but Chinese use human excreta over vegetables in the gardens The Pacific Coast receives the majority of those returning from the Philippines, and there is no law prohibiting the dangerous practices of the Orientals He operates by the R F Weir method, and flushes the colon with medicated solutions

Dr. K. A J Mackenzie, Portland, believed Dr Holt too conservative in waiting a whole year before operating, and stated that in view of the dangers of perforation, six months should be set as the period of operation

Dr A. E Rockey, Portland, has improved on the Weir method, by sewing the cecum to the abdominal peritoneum and wrapping the appendix around a gauze roll, then waiting for a few weeks for the appendix to slough, and form a line of demarcation near the stump Then he cuts the dead tissue away, leaving a small stump of appendix, with a well secured opening

Stokes Adams Disease, Heart Block.

Dr. William House, Portland, considered arteriosclerosis from syphilis or alcoholism or injury to the upper part of the cord, as the immediate causative factor He reported a case of syncopal seizures, eight or ten a day, with a pulse of 28, pupillary inequality and exaggerated left patellar reflex, which he diagnosed as being caused by basilar aneurism

Dr. R. L. Gillespie, Portland, saw this case and diagnosed it as one of brain pressure, but had not located it

Opsonic Index in Tuberculosis

Dr. W R. M Kellogg, Seattle, recorded observations with charts in 23 cases of localized tuberculosis Index determined 205 times at intervals of ten days, and when indicated, a vaccination of 1/3000 to 1/8000 mg tuberculin, T R, was given In 178 cases parallel counts of the phagocytic index were compared with the opsonic index There was an average difference of 025 between them He reported several cases where marked improvement had taken place, but caseous glands, he said, will persist

Dr E J Labbe, Portland, reported a case of healed pulmonary lesions, in which there developed ulceration of the intestines Improvement was noted after three vaccinations of T R

Dr. J A. Fulton, Astoria, said that for twenty five years before the word opsonin was known, Dr August Kinney of Astoria had been studying the treatment of tuberculosis with serum He had learned to reduce the strength of the serum and lengthen the intervals

Diphtheria Antitoxin in Hay Fever and Asthma.

Dr. J A. Reuter, The Dalles, has used antitoxin in 60 cases of these diseases in repeated doses of 2,000 to 3,000 units Forty-one patients were cured Fifteen cases were caused by diseases of the heart, kidneys or liver, or were due to tuberculosis. These patients were not benefited, and four more were only temporarily relieved

Dr. C J Smith, Pendleton, used the antitoxin in several cases, and believed that 60 per cent of asthmatics can be benefited, failures being due to badly selected cases, where emphysema has occurred, or destructive inroads have been made in the lung tissue

Dr. R. L. Gillespie, Portland, had used the treatment in two cases, with good results

Dr. E. A Pierce, Portland, applied it in 12 cases, and almost uniformly met more or less success He thought most relief was gained in neurotic cases with anemia.

Dr. K. A. J Mackenzie, Portland, believed the serum has a soothing effect on the mucous membrane of the bronchial tubes, and that in diphtheria the curative action is not spent alone on the blood, but that the mucous membrane of the throat receives a localized influence.

Surgical Treatment of Goiter

Dr. Andrew C Smith Portland, thought that this field of surgery is shunned, yet it is one which gives eminent satisfaction He has done 17 thyroidectomies, and all but four were done under local anesthesia, preceding it with a hypodermic injection of morphin and atropin, and marking the line of incision with carbolic acid, tracing again with alcohol He is careful to throw the anesthetic completely across the line of incision This prevents the engorgement caused by general anesthesia, avoids asphyxia, and permits the patient to phonate at the request of the operator

Abdominal Diagnosis as Tested by Operation

Dr J N Hall, Denver, insisted that an abdominal case not doing well, or not too far advanced, should be subjected to an exploratory operation He reported 312 cases, in which the diagnosis was substantially correct in 244 Several cases showed mistaken diagnosis, yet operation was necessary

Dr R. C Coffey, Portland, said that internist and surgeon should work together in such cases, and thus reduce the danger to the minimum

Dr A. C Smith said that it is often impossible to make a pathologic diagnosis before incision, and we must go in prepared to do whatever presents These are surgical cases and they must be given surgical treatment

Far Advanced Cases of Cancer of Large Bowel.

Dr. R. C Coffey, Portland, in 14 months treated 13 cases, only six of which were seen early enough to render radical operation justifiable He did mostly enteroanastomosis Far advanced obstructive cancer, not extensive, should be removed Extensive growths producing obstruction should be excised in selected cases, others may be relieved by entero or colocolostomy Extensive growths with no obstruction but cachexia demand such operations as will add to the comfort of the patient

Sanatorium Treatment of Tuberculosis in the Northwest

Dr. E. A Pierce, Portland, said that of 90 cases treated for an average of 70 days, 9 were apparently cured, 33 improved and 26 unimproved Humidity of the atmosphere keeps the air practically dust free, and more improvement is made during the coldest, rainiest weather than in the hot months The cloudy skies are restful, and this climate is as well adapted as any other to recovery

Dr. J N Hall, Denver, remarked on the freedom from dust on the railroads of western Oregon

Dr. Kellogg, Seattle, thought the Oregon climate restful to a weak heart, relieving tension of the nerves

Dr Kuykendall, Roseburg, thought the time not yet ripe to draw conclusions as to the percentage of recoveries

Epidemic Cerebrospinal Meningitis in Oregon

Dr C H. Wheeler, Portland, gave the number of deaths as 61 during May and June, 1907, the disease being most virulent in May, when 35 died The youngest victim was 3 years of age and the oldest 65 Temperature was subnormal, or elevated 1 to 1½ degree, pulse slow until death was near, then increasing as high as 106 Neither rigidity of the neck nor Kernig's sign were always present Hemorrhagic spots were small and indicated gravity He believes the germ is disseminated through the atmosphere, and that overcrowding and breathing vitiated air conduces to the acquirement of the disease Cold, dry and cloudy days are favorable to its spread, while bright sunlight, or alternate rain and sunlight, arrest its course.

Resolutions

Dr. F W Vandyke, Grant's Pass, presented correspondence held with the New York Mutual Life Insurance Company, whose agents assured Dr Vandyke that satisfactory men were easily secured in Portland as insurance examiners He asked for an expression of the regard with which the reduction of fee to $3 was held by the society He said that no doctor in his county would make an examination for less than $5 He was informed that last year the society passed a resolution to make no examinations for less than $5, but that some were doing it, and had not been reminded by the society Dr Vandyke moved that the society reaffirm its action of last year and instruct the board of councilors to enforce the resolution This motion was carried.

Dr. K. A. J Mackenzie introduced a resolution asking the appointment of a committee to investigate the Chinese vegetable gardens, and report on the use of human excreta for enriching as described in Dr Holt's paper The resolution was adopted

The Examination of a Patient, with the View of Giving Medical Opinion

Dr George F Wilson, Portland, reported several cases of hysteric paralysis and contractures, and of malingering where damages were brought against companies, and were granted by the court Begin examination at the top of the head, and proceed downward, interrogating the position and character of each organ and how it is functionating, looking out for anomalies of the anatomy

Dr Willis, Seattle, said the points of the paper might be summed up as an avoidance of prejudice and thoroughness of examination and the habit doctors have of disagreeing does much to bring the profession into disrepute

Dr A W Moore, Portland, said the popular idea is that the company's physician must be prejudiced The insurance companies have figured out and hold an estimate of how much loss they will meet each year through these dishonest doctors, the family physician and the company doctor There should, by all means, be a commission on examination appointed by the court

Dr W T Williamson said a doctor may be honest but ignorant One must know the tests and take time to use them A doctor who has not taken time to examine his patient thoroughly is not fit to go on the stand A broad minded physician will try to be fair and unbiased and give testimony only as a scientific physician

Mountain or Spotted Fever in Idaho and Eastern Oregon.

Dr William O Spencer, Huntington, described the disease as being very fatal in the Bitter Root Valley of Montana, and appearing with a lesser mortality in the northwestern states being limited to certain localities, occurring in the spring and summer months The cause is the bite of the wood tick, which introduces parasites into the blood, which are described as ovoid intracorpuscular bodies showing ameboid movements

Ulcer of Stomach

Dr K A J Mackenzie Portland reported 40 cases of hematemesis from ulcer of the duodenum or stomach without a death The best treatment is lavage with water at a temperature of 120 to 130 F

Medical Education

The committee on medical education reported efforts made along the lines laid down by the American Medical Association and recommended that lectures be delivered in schools conventions and other places, and articles be written for the public press by physicians, as advised by the American Medical Association The report was adopted

Reciprocity

Dr R L Gillespie, Portland, presented a resolution asking that a committee be appointed to confer with the state boards of the states adjoining Oregon with a view to establishing laws of reciprocity The resolution was referred to the committee on public policy and legislation

Transactions

The House of Delegates voted to publish the transactions of the association in book form, for the benefit of absent members who pay yearly dues yet are prevented from attending the conventions

OREGON STATE HEALTH ASSOCIATION

Second Annual Meeting, held at Seaside, July 12, 1907

Officers Elected

Officers elected were President, Dr E P Geary, Portland, vice president, Dr Esther C Pohl, Portland, secretary treasurer Dr Fred Ziegler Portland

Dr E P Geary read a paper on 'Some Problems in Public Health"

Dr J M Holt, Astoria, said these questions are of interest to the marine service as well as to the Army He considered the Texas quarantine against tuberculosis as extreme, and feared it would not sustain the pressure that would be brought to rescind it The trouble with quarantines is that the law usually allows diseased persons to go out of the state, but allows no one to come in The U S P H and M-H S is doing good work examining all immigrants but the public press is usually pretty bitter when immigrants have to be returned

Dr E A Pierce, Portland, thought that the hardest work a state board has to do is to get the county health officers and the county judges to work with the board When this is accomplished we can succeed in getting the doctors in the outlying districts to do better work in sanitation

Dr C H Wheeler complained that doctors do not always report contagious disease, and considerable infection is kept about in that way He has attempted school inspection, but with 23,000 children, and no one regularly delegated to the work, it was an impossibility

Dr Pierce suggested that the superintendent of public instruction be requested or required to put courses in sanitation in the teachers' institutes

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Medicolegal

Powers Relative to Enforcement of Vaccination Law and Probable Cause for Commencing Prosecution

The Supreme Court of North Carolina says, in the case of Morgan vs Stewart, that the statute law of that state provides, in substance (Revisal of 1905, Section 4451), that on the appearance of smallpox in a neighborhood the authorities of any city or town or the sanitary committee of any county may make such regulations and provisions for the vaccination of its inhabitants, and impose such penalties, as they may deem necessary to protect the public health And Section 3455 provides that, "If any person shall violate any of the rules and regulations of the sanitary authorities of any county in regard to vaccination, he shall be guilty of a misdemeanor, and fined, not exceeding fifty dollars, or imprisoned not exceeding thirty days"

The court finds no precise form in which the resolutions of a county sanitary board should be couched nor any specific or stated order of proceedings where such matters are to be considered or determined It sees no reason why an order of the sanitary committee of a county in which there were a number of cases of smallpox should not be upheld as a valid exercise of the authority conferred on them by the statute, when the order provided that "any person or persons within a radius of three miles of any schoolhouse who willfully refuses to be vaccinated or to allow any one in his charge to be vaccinated shall be guilty of a misdemeanor," and that the county superintendent of health should proceed to enforce compulsory vaccination to such an extent as he might consider necessary They could not declare the prohibited act a misdemeanor because its status had already been so fixed by public law, but their resolution could still be received and construed as a regulation requiring parties within the prescribed territory to submit to vaccination, and the statute makes the refusal a misdemeanor within the jurisdiction of a justice of the peace Legislation of this character has been upheld by well considered decisions in this and other jurisdictions Hutchins vs Durham, 137 N C 68, State vs Hay, 126 N C 999, Morris vs Columbus, 102 Ga 792

It is also well established that the legislature may confer on local boards, certainly those clothed with governmental functions, the power to make reasonable regulations to protect the public health and to fix and establish facts or conditions on which a statute makes its own action depend State vs Railroad, 141 N C 852, 8 Cyc 830, Freund on Police Power, Section 34 And while these local regulations are required to be reasonable, and are, to some extent subject to judicial control, both as to the existence of an apprehended danger and the reasonableness of the relief (Freund on Po lice Power) this court has held (State vs Hay) that, "where a statute of this kind has been passed and the conditions established which call it into operation, it thus becomes a law binding on each and all alike, and it is optional to no one's private judgment whether to render compliance or not If there are exceptional cases, where, owing to the peculiar state of the health or system, vaccination would be dangerous, that would be a matter of defense, the burden of which would be on the defendant"

In this case the defendant, as county superintendent of health in the county where such order was passed, having heard that there were several cases of smallpox near the plaintiff's school, one within a half mile, and in sight, called at the schoolhouse, explained the conditions and the law, as he understood it, and requested that he be allowed to vaccinate the plaintiff and his scholars, which request was refused Having referred the matter to the secretary of the state medical board at Raleigh, and having been advised that the teacher was indictable and should be proceeded against, and, furthermore, having been shown a letter from the attorney general of the state to the superintendent of public instruction, in which the attorney general advised that regulations similar to those of the county in question could be lawfully enforced, the defendant county superintendent of health instituted a prosecution on which the plaintiff in this case was tried and acquitted Then the plaintiff instituted this action for malicious prosecution, and got judgment But the Supreme Court reverses that judgment, saying that it seems clear to it that in no aspect of the testimony, as the same was presented, had there been a want of probable cause shown, and the court below should have dismissed the case as on judgment of non suit. Probable cause, in cases of this kind, has been properly defined as the existence of such facts and circumstances, known to him at the time, as would induce a reasonable man to commence a prosecution

Peculiar Religious Beliefs and Sanity

The Supreme Court of Iowa says, in the will case of Henderson vs Jackson, that the allegation of undue influence on which the contestants relied was simply this, that the testatrix, four years after the death of her husband, felt herself bound by his request and by her promise made him in his lifetime so that she made a will disposing of her property in a different manner than she would have done had the alleged influence not existed. But this fell very far short of the undue influence which in law is held to invalidate a will Just what was meant by the allegation of her fear that she might "suffer the displeasure of her husband in the future" was not clear, unless it might be interpreted as a belief on her part that she would meet her husband in the world to come, and that her failure to show deference to his wishes here would tend to mar the pleasure of their communion there But who may assume to say that such an article of faith is the product of a diseased mind, or that a person who acts on it is the subject of undue influence?

If a devout person, being about to prepare his will, makes it the subject of prayer, and believing that he has received divine help in planning the distribution of his estate, proceeds to act accordingly, would any court sustain a verdict which finds in this part alone a ground for invalidating such will? There are many persons whose soundness of mind and business sagacity none can doubt, who believe in the possibility of communication with disembodied spirits, and habitually take counsel from such sources with reference to their conduct in life. Is such a person incapable of making a valid will, and should his will be set aside as the product of an insane delusion, or as having been executed under undue influence, simply because he believes his act to have the approval of the inhabitants of the spirit land? The court thinks not

Few men live who have not some desire, hope, or belief with reference to a life to come and the continued conscious existence in some form of their departed friends, and such faith has always been and doubtless will always remain a potent factor in the lives and conduct of nearly every member of our race The particular form of faith which one espouses may seem to another unreasonable or unphilosophical or even ridiculous but it is not for the legislature nor for the courts to judge between them, or brand the adherents of any particular belief as lunatics or incompetents

It is true that if there be other circumstances fairly tending to show unsoundness of mind, or the exercise of undue control of one mind by another, all these peculiarities of life and conduct, religious or otherwise, will properly be a matter of inquiry, and may in some instances furnish legitimate support to a verdict or judgment against the validity of a will But standing alone, the court thinks no case can be found in which it has been held that such peculiarities of the testator are sufficient to impeach his testamentary capacity or to establish a charge of undue influence For instance, it is held that a belief in witchcraft or in the visits of ghosts does not invalidate a will Nor is it sufficient to show that the testator's imagination was generally controlled by his belief in witches, devils and evil spirits which tormented him Or that the testator was a firm believer in the transmigration of the souls of men after death into inferior animals, and that, influenced by such belief, left his property for a society for the prevention of cruelty to animals Or that his ordinary conduct was more or less influenced by spiritual beliefs and manifestations In Brown vs Ward, 53 Md 376, the testatrix consulted the spirit of her deceased brother, and in drawing her will agreed in accordance with instructions believed by her to have been so received, and it was held not sufficient to defeat the will so made Belief in future rewards and punishments is not a test of soundness of mind The belief by a testatrix that the spirit of her deceased husband is present with her is not an insane delusion which affects the validity of her will

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York.

August 10

1 *Plain Truths About Syphilis L D Bulkley, New York.
2 Differentiation of Black Pigment Found in Liver Spleen and Kidneys from Foreign Deposits F Gaertner Pittsburg, Pa.
3 Etiology and Treatment of Prostatic Concretions J M. Thompson Boston
4 *Ophthalmia of the Newborn. J C Edgar, New York.
5 *Sterility in the Male. F R Hagner and H G Fuller Washington, D C

1 **Plain Truths About Syphilis**—Bulkley states that syphilis is a much more prevalent disease than is generally supposed, and is not infrequent in good society in the city and country He emphasizes the facts that it is not necessarily a venereal disease, and that innocently acquired syphilis is of common occurrence He asserts that in its earlier stages too much care can not be exercised in order to prevent the infection of others, innocently or otherwise

4—This article is almost the same as that which appeared in The Journal, Aug 3, 1907, page 411

5 **Sterility in the Male.**—For the treatment of this condition Hagner and Fuller employ an operation for closure of the globus minor, by making an anastomosis between the globus major and the vas deferens, which was devised by Martin of Philadelphia

New York Medical Journal

August 10

6 *The Urine in Pregnancy J C Edgar, New York
7 *Cerebral Localization of Aphasia. C L. Dana New York.
8 *Angioneurotic Edema. S Loving Columbus Ohio
9 *Hysteria. A. Gordon Philadelphia.
10 Physiology and Pharmacology of the Ureter D R Lucas, New York
11 *Case of Addison's Disease in Child D Felberbaum and E. Fruchthandler, New York.
12 *An Unpleasant Experience with Ethyl Chlorid. J T Rugh, Philadelphia.
13 Mercuric Values in Treatment of Syphilis W F Bernart, Chicago

6 **Urine of Pregnancy**—According to Edgar, the normal pregnancy urine must not be persistently small in quantity, the urea output must not be persistently low, it should not contain albumin, casts or excessive quantities of indican. Moreover, the total nitrogen should be presented by proper proportions of the nitrogen compounds A number of cases

are cited to illustrate the significance of any deviation from the points mentioned, and the treatment required

7 —Abstracted in The Journal, May 18, 1907, page 1712

8 **Angioneurotic Edema** —Loving reviews the clinical history of this affection, and reports five cases

9 **Hysteria** —Gordon discusses the nature of hysteria, its medicolegal relation and the diagnostic significance of its motor, sensory and psychic manifestations

11 **Addison's Disease** —The authors report a case of Addison's disease, occurring in a little girl, 12 years of age There was absence of some of the classical symptoms—the severe gastric disturbances, marked asthenia, and attacks of syncope —but the mode of termination proved the diagnosis of Addison's disease to be correct A necropsy was not permitted The authors also present an analytical study of 24 cases that have been reported in the literature They draw attention to the fact that together with tuberculosis of the adrenals, the mesenteric lymph nodes are often found diseased They deem this finding of significance in pointing out the source of infection through the intestines Furthermore, death usually occurs under convulsions, as in their own case

12 **Ethyl Chlorid Anesthesia** —Rugh reports an unpleasant experience with ethyl chlorid For obvious reasons this anesthetic was preferred to others, but the choice almost cost the patient his life When surgical anesthesia was obtained there were clonic spasms of the legs and arms, respiration ceased, and the muscles of the jaws and neck were set in clonic spasm, cyanosis was marked, the eyes were fixed and staring, but the pupils remained contracted The most vigorous attempts to restore respiration were successful after there had been an actual suspension of respiration for about three minutes

Boston Medical and Surgical Journal

August 8

14 *Comparative Tests for Occult Blood in Gastric Contents and Feces J W Dewis Boston
15 *Fermentation Specific Gravity Method of Estimating Sugar in Diabetic Urine H A Christian, Boston
16 Treatment of Fever Cases in Public Service C A Drew, State Farm, Mass
17 *Arteriovenous Anastomosis J C Hubbard, Boston
18 *Glottic Spasm of Nasal Origin in Adults F A. Conlon, Lawrence, Mass

14 **Tests for Occult Blood.**—Dewis made an extensive research into the comparative value of the various tests employed for the detection of occult blood in the gastric contents and feces He says that the benzidin test is by far the most delicate and also the most practical, a positive benzidin and a positive guaiac test must be considered as even more trustworthy than a positive benzidin test alone, and guaiac is a safer test than benzidin for stools when meat has not been excluded from the diet

15 **Estimating Sugar in Diabetic Urine** —Christian reviews briefly his results in testing diabetic urine for sugar by means of Fehling's method, the polariscopic method, and the fermentation specific gravity method He thinks the last named is the simplest for the general practitioner because it requires no laboratory, and needs only a bit of yeast from the kitchen, and the urinometer or specific gravity bulb, which every physician has Furthermore, it is a sufficiently accurate method for making a quantitative estimation of glucose in the urine to enable the practitioner to treat scientifically his cases of diabetes mellitus

17 **Arteriovenous Anastomosis** —Hubbard reports two cases, in which an arteriovenous anastomosis was made For the history of one of these cases, previously published, see The Journal, Nov 17, 1906, page 1683 The second case was that of a woman of 60 years, with senile gangrene of the foot and of a portion of the leg The arteries were atheromatous The femoral artery was invaginated into the femoral vein in Scarpa's triangle, and the distal end of the artery and the proximal end of the vein were ligated There was no shock and no change in the appearance of the leg The vein pulsated after the controlling clamps were removed Ten days later it was necessary to amputate above the knee for the gangrene, which had been present before the operation The anastomosis was cut down on and removed The artery was found filled with a loose, easily detached clot This case was, therefore, a distinct failure Hubbard suggests that clot formation may be prevented by smearing vaselin or some other substance onto the cut end of the invaginated artery, or to cut the outer layers of the artery a quarter of an inch or so back of the intima, and thus leave a greater length of intima as a cuff, the back of which could be covered with vaselin, so that when invaginated into the vein it might stick to the venous wall and cover over the cut end of the outer portion of the artery

18 **Glottic Spasm in Adults** —Conlon reviews the clinical histories of 15 cases that have been reported in the literature and adds one personal case The patient, female, aged 43, suffered from attacks of glottic spasm about two years, but did not seek relief until she had five or six attacks during 24 hours Conlon cocainized and removed the anterior end of the middle turbinate, which cured the patient

The Lancet-Clinic, Cincinnati

August 10

19 Typhoid Perforation with Operation J D Greiwe, Cincinnati
20 Multilocular Ovarian Cyst. A H Barkley, Lexington, Ky
21 Hay Fever E S McKee, Cincinnati.

Surgery, Gynecology and Obstetrics, Chicago

July

22 *The Teaching of Surgery D P Allen, Cleveland, Ohio
23 *Acquired Diverticulitis of Large Intestine W J Mayo L B Wilson and H Z. Giffin Rochester Minn
24 Continuous Passive Hyperemia in Delayed Union of Fractures J B Roberts Philadelphia
25 *Aneurismal Varix G T Vaughan Washington, D C
26 *Rhinoplasty by Means of One of the Fingers. J M T Finney, Baltimore, Md
27 *Treatment of Posterior Capsule of Gland in Thyroidectomy C H Mayo, Rochester, Minn
28 *Case of Non parasitic Cyst of Spleen T W Huntington, San Francisco, Cal
29 *End Results in Operation for Carcinoma of Breast. A Vander Veer Albany N Y
30 Results of Operations for Carcinoma of Breast at Massachusetts General Hospital from 1894 to 1904 R. B Greenough, C C Simmons and J D Barney, Boston
31 *End Results in Operations for Carcinoma of Breast A F Jonas, Omaha Neb
32 *End Results Following Operations for Carcinoma of Breast W Meyer, New York
33 *End Results Following Operation for Carcinoma of Breast F S Dennis New York.
34 *Resection of Sound Femur in Gigantism and Asymmetry R W Johnson, Baltimore
35 *Brain Surgery S H Weeks Portland Me
36 *Diverticulum Ilei as Cause of Complete Intestinal Obstruction F H Gerrish, Portland Me
37 *Prostatectomy A MacLaren, St. Paul, Minn
38 *Congenital Dislocation of Hips O H Allis Philadelphia
39 *Surgical Treatment of Cancer of Neck G Crile, Cleveland Ohio
40 *Desirability of Early Operations on the Nerves in Ischemic Paralysis L Freeman Denver, Colo
41 *Prolapse of Umbilical Cord H M Stowe Chicago
42 *Induction of Labor at Term* J B De Lee, Chicago

22 —Abstracted in The Journal, June 1, 1907, page 1885

23, 25, 27 —Abstracted in The Journal, June 8, 1907, page 1983

26 —Abstracted in The Journal, June 1, 1907, page 1886

28 **Cyst of Spleen** —Huntington reports a case in which the symptoms strongly suggested a pancreatic cyst, although the early history of the case is more suggestive of splenic involvement Over two gallons of dark-colored fluid were withdrawn from the cyst The cyst wall was removed, and the operation was completed by excising the distal portion of the enormous cyst, puckering the cut margins with a purse string suture, and finally marsupializing the remaining portion of the sac to secure external drainage The subsequent history of the case was one of rapid and uninterrupted recovery

29 —Abstracted in The Journal, June 22, 1907, page 2150

31 **Cancer of Breast** —Jonas' operative experience comprises 211 primary operations for cancer of the breast, 30 operations for local recurrences in his own cases, and 14 cases done primarily by other operators, totalling in all 255 cases Out of this number there were 6 deaths, 2 from sepsis, 1 during a secondary operation, when a vein was punctured, admitting a large quantity of air, 1 due to an overdose of chloral, self administered, and 1 from secondary hemorrhage on the thirteenth day [The cause of death in the sixth case is not mentioned —Ed] Among 177 cases of primary operation that could be traced after three years there were 38 recurrences in one year, and 34 during the second year, leaving 105 cases without recurrence at the end of three years All the recurring cases

finally ended fatally All the operations were done in the radical way, and in a number of instances portions of one or several ribs were removed whenever there was the slightest indication of the neoplasm having approached the rib

32—Abstracted in The Journal, June 22, 1907, page 2149

33 Cancer of Breast.—The study of the end results, after many years, of 50 selected cases, has shown Dennis the following important clinical facts 1 Cancer of the breast is sometimes permanently cured, or at least 25 years have elapsed with no evidence of a return 2 Patients may go as long as 18 years and yet finally have a return in some other organ 3 In the cases in which no return has been observed, the operation was performed, almost without exception, within six months from the incipiency of the disease, thus showing the great importance of early operation. 4 The more radical the operation within reasonable limits, the better the prognosis 5 In some cases, in which the outlook was most unfavorable, as manifested by extensive ulceration, hemorrhage and wide spread axillary involvement, the end results have been entirely satisfactory

34.—Abstracted in The Journal, June 1, 1907, page 1886

35—Abstracted in The Journal, June 15, 1907, page 2069

36—Abstracted in The Journal, June 8, 1907, page 1984

37 Prostatectomy—MacLaren favors the perineal route for removing the prostate

38—Abstracted in The Journal, June 8, 1907, page 1983

39 Carcinoma of Neck.—Crile considers that the chances for final cure following operations for cancer of the neck compare favorably with those of cancer of the breast He has done 150 operations on 135 patients The immediate use of the Roentgen ray applied on the naked wound is considered useful, and the creation of a granulation tissue barrier across the base of the neck to protect the mediastinum from invasion is advised, and its efficacy emphasized

40—Abstracted in The Journal, June 15, 1907 page 2069

41 Prolapsus Funis—Stowe describes his method of relieving this condition, and reviews briefly 51 cases He also reports 3 cases in which normal salt solution was injected into the uterine cavity to take the place of the liquor amnii

American Journal of Obstetrics, New York.

August

43 Conservative Ovarian Surgery C R Hyde, Brooklyn
44 *Cases of Puerperal Eclampsia. H G Partridge, Providence R I
45 *Polycystic Lutein Degeneration of Ovaries. S Wiener New York.
46 Hyoscine Anesthesia in Obstetrics G F Butler Wilmette Ill
47 Sins of Omission and Sins of Commission in Gynecology G H Ballerav Paterson N J
48 Labor in Contracted Pelves K. C McIlwrath Torónto
49 Treatment of Puerperal Infection G H Noble Atlanta, Ga
50 *Malformation of Uterus. J Milligan Jacksonville Ill
51 *Menstrual Arthritis J D Morgan Washington D C
52 Imperforate Vagina and Absence of Anus. E T Hargrave Norfolk Va.

44 Puerperal Eclampsia.—Partridge reports 37 cases of puerperal eclampsia that occurred in 883 labors, or one case to each 23 8 cases Twenty five patients, or 67 5 per cent, were primipara, and 12, or 32 4 per cent, were multipara The average was 27.2 years Of the 37 mothers, 12 died, a mortality of 32 1 per cent Of the 34 children, living *in utero* at entrance to hospital, 14 died a mortality of 41 1 per cent Three were macerated when delivered In 19 cases, or 51 3 per cent, the convulsions ceased with delivery In 4 cases they seemed to increase in severity In the 12 fatal cases the average number of convulsions was 12 In the 25 non fatal cases the average number was 4 6 Nearly every patient was delivered manually, as soon as possible after entrance

45 Polycystic Lutein Degeneration of Ovaries.—Wiener discusses this degeneration of the ovaries, which thus far has always been a concomitant of hydatid mole and chorioepithelioma

50 Malformation of Uterus—The two cases reported by Milligan are one of uterus didelphys and one of bicornute uterus In the latter case the division began at the internal os

51 Menstrual Arthritis—Morgan reports 4 cases of arthritis in which the joint lesion seemed to be strongly associated or dependent on the menstrual function Two of these cases are referred to as cases of precocious menstruation, as one patient began menstruating when 11 years and 9 months old, and the other at 12 years and 5 months The other two patients were aged respectively 18 and 25 years In one of the cases, for five months periodically, these pains in the joints returned at the menstrual period, and were best governed by putting the patient to bed the day before the expected menses, encouraging the menstrual flow, and sometimes administering salicylates With all of these patients, although they have improved greatly, and go for months without arthritic pain at the menses, Morgan has noticed that a scanty menstruation or the avoidance of going to bed the first day or two of the menstrual flow, will often bring about fever, pain and swelling of the joints

Annals of Surgery, Philadelphia

August

53 *Avulsion of Spine of Tibia J H Pringle, Glasgow Scotland.
54 *Osteogenesis Imperfecta and Idiopathic Fragilitas Ossium C C. Simmons Boston
55 *Traumatic Epithelial Cysts L. Buerger, New York
56 Radiographic Findings of Syphilis of Bones M. W Ware, New York
57 *Correction of Certain Forms of Saddle Nose. L. Freeman, Denver Colo
58 *Intussusception J D Rushmore Brooklyn
59 *Operation in Two Stages for Relief of Ileus of Jejunum E. F Robinson Kansas City Mo
60 *Cyst of Urachus T L. MacDonald Washington D C.
61 Chronic Cystic Ureteritis B Stow New York
62 *Operation for Hypospadias. R. H Russell, Melbourne, Australia
63 A Male Pseudo-Hermaphrodite J S Stone Boston.
64 New Retractor to be Used in Suprapubic Cystotomy G Walker, Baltimore
65 *Multiple Fractures. A P C Ashhurst Philadelphia
66 Fractures of Head and Neck of Radius. T T Thomas Philadelphia
67 *Isolated Fracture of Great Trochanter G E Armstrong, Montreal
68 Postoperative Treatment. J H Gibbon Philadelphia.

53 Avulsion of Spine of Tibia.—Pringle adds one case of this kind to three thus far recorded in the literature. The patient received a severe blow on the outer aspect of the left knee joint. The knee became swollen from effusion into the joint cavity The injury was thought to be a rupture of the internal lateral ligament On opening the knee joint it was seen that the anterior crucial ligament still attached to its bone insertion had been torn off the tibia, carrying the spine with it. With a little trouble this was sutured and the wound closed The man made a good recovery, and the knee troubles him only a little, at times, when coming down stairs

54 Osteogenesis Imperfecta—Simmons reports two cases, one in a girl 3 years of age, and the other in an infant of 10 months This second patient died of a chronic bronchitis A careful study was made of both cases, in the first by means of the radiograph, and in the second at the autopsy, and the findings are recorded in full

55 Traumatic Epithelial Cysts—Three instances of traumatic epithelial cysts are recorded by Buerger In the first case the cyst was situated on the palmar surface of the last phalanx of the left index finger It was easily removed by grasping its protruding portion with the forceps and pulling it out of its bed in the tissues The unusual feature observed in this case was the fact that the cyst was nowhere covered by normal epidermis, and was lying partly without and partly within the tissues In the second case the cyst was located as in the first case At its most prominent part it presented a tiny opening, through which a white granular substance could be expressed The tumor was excised, and was found to be filled with white granular cheesy material In the third case, one of chronic mastitis, the cyst was situated under the skin of the breast near the axillary fold, it was incised, and was found to be filled with thick mucoid pus The wall of the abscess was composed of squamous epithelial cells ranged in a manner closely resembling the epithelium of the skin.

57 Correction of Saddle Nose—A new method of operating has been devised by Freeman. A short incision is made across the root of the nose between the eyes Through this the skin is undermined along the bridge to the tip, and also well down the sides, if the skin requires much stretching After the pocket beneath the skin has been prepared, the concavity of the nose will necessitate the insertion of the plate at such an angle that its end will catch in the tissues, thus preventing it from sliding into position In order to obviate this Freeman perforates the tip of the nose with the point of a large darning needle The needle is then reversed and its blunt end pushed upward subcutaneously, until it passes out through the incision On top of this needle, as a guide, the plate is easily slid into place The wound is closed with a subcuticular suture or a little cotton and collodion There is said to be no tendency to gaping, and only an insignificant scar results

58 **Intussusception**—Rushmore reviews the incidence and clinical history of intussusception, which, he says, is another name for internal strangulated hernia, as observed by him in 227 cases Of this number, 14 cases occurred in the small intestine, 17 in the large intestine, and the remainder combined He emphasizes the fact that treatment ought to be surgical and practiced within the first 12 hours, like the treatment of any other form of strangulated hernia Laparotomy and manual reduction offer the patient the best chance of recovery

59 **Ileus of Jejunum.**—Robinson reports a case, which illustrates the difficulty of determining, even at operation, the exact cause of obstruction, and demonstrates the wisdom of immediate drainage of the bowel, with secondary resection in critical cases of acute ileus in which the integrity of the intestine is questionable

60 **Cyst of Urachus**—MacDonald's patient was 40 years of age, and gave a history of a slowly growing abdominal tumor, beginning in the region of the bladder and growing upward, with the gradual onset of pressure symptoms, especially difficult respiration, pain and impaired digestion The sac was situated in front of the peritoneum, but was surrounded by very firm adhesions These were broken up with great difficulty, and the cyst removed In the wall of the cyst were a number of nodules which proved to be papillomata An interesting feature in the case was the failure of the peritoneum to absorb a large amount of normal salt solution with which the abdominal cavity had been filled On the seventh day after the operation the patient presented symptoms of sepsis The lower end of the wound was opened, allowing the escape of quarts of the salt solution, which had become purulent, and which presented the colon bacillus characteristics Drainage and irrigation was continued for a week, after which the wound closed, and convalescence and return to health were satisfactory

62 **Operation for Hypospadias.**—Russell describes a modification of his original method of operation, for the treatment of hypospadias This method consists of two operations At the first operation the penis is released and straightened and the glandular portion of the urethra is formed, and lined with preputial skin At the second operation the perineal and penile portions of the urethra are formed and closed, so as to complete the channel from the perineal opening to the glandular urethra For this operation suprapubic drainage is employed A year or more, he states, should be permitted to elapse between the two operations

65 **Multiple Fractures**—Ashhurst presents an analysis of 240 cases, and reports 6 cases of multiple fractures of the upper extremity

67 **Fracture of Great Trochanter**—Armstrong reports the case of a man who sustained an injury of the right thigh, just behind the great trochanter, which resulted in a fracture of this process The fracture was diagnosed by the Roentgen ray, clinical evidence practically being absent, except for limitation in motion of the leg

Albany Medical Annals.

August

69 Physicians as Men of Letters A S M Chisholm Bennington Vt
70 Therapeutic Value of Roentgen Ray A Holding Albany, N Y
71 *Primary Carcinoma of Uvula C F Theisen Albany
72 *Brace for Treatment of Flat or Weakened Conditions of Feet J M Berry, Troy, N Y

71 **Primary Carcinoma of Uvula**—Theisen's patient was 52 years old Symptoms incident to a growth in the throat had been felt for three months On examination the uvula was seen to be transformed into a somewhat nodular, firm tumor The growth had not quite extended to the soft palate, nor was there any induration of the surrounding tissue No enlarged glands could be felt anywhere in the neck The growth was removed, including a small portion of the soft palate Fourteen months after the operation there was not the slightest indication of a recurrence A microscopic examination of the tumor disclosed a carcinoma

72 **Brace for Treating Flat Foot.**—Berry has modified his original brace for treating flat or weak foot After the foot is oiled with vaselin an outline of the brace, including both the arch supporting portion and the base piece, is drawn on the foot with a dermatographic pencil and a plaster mold made of the arch of the foot, including the heel In making the mold the leg is flexed at the knee and the foot rests on a support with its internal surface upward The foot rests in a shallow, open, rectangular box, one long side of which has been removed The ball of the foot rests against the long side of the box and the bottom of the heel is held about an inch from the side of the box The back of the heel, however, rests against one end of the box The space between the foot and the side of the box is filled with plaster cream, and the plaster cream is spread up over the foot to include the arch and heel The dermatographic pencil outline of the brace transfers to the mold The mold is coated with vaselin, the dematographic outline freshened and a plaster casting made The dermatographic outline again transfers and following this outline a drawing of the brace is made on the cast By making use of the dermatographic pencil outline as above described no mistake can be made by either the surgeon or instrument maker as to the proper position on the cast over which to fit a brace The arch is cut out higher or shaped up as desired and the cast sent to the instrument maker The instrument maker constructs a brace fitting the cast and following the outline drawn on it Both the arch supporting portion and the base piece are made of galvanized steel, the weight and strength of the steel depending on the weight of the individual for whom the brace is made

Denver Medical Times.

August

73 *Double Inguinal Hernia J Boice, Denver Colo
74 Impacted Tooth in Maxillary Sinus T E Carmody, Denver, Colo
75 Reflexes and Anesthetics C G Parsons, Denver
76 *Venesection in Pneumonia V Thompson Englewood Colo
77 Double Infection—Scarlet Fever and Measles T S Fantz, Denver
78 Diarrheal Disorders R J Smith Schenectady N Y
79 Laboratory Diagnosis for Practitioner J C Todd Denver

73 **Double Inguinal Hernia**—In the case reported by Boice the sac on one side contained omentum, and that on the other contained the ascending colon, cecum and appendix, with a small portion of the ileum The operation proved successful

76 **Venesection in Pneumonia**—In a typical case of lobar pneumonia Thompson opened the median basilic vein and allowed the patient to bleed until he complained of faintness The effect was immediately noticeable on the pulse and general condition of the patient On the third day after the initial chill the temperature dropped to 100 F, on the fourth day the patient got out of bed, and on the eighth day he drove six miles to the doctor's office and was discharged

Utah Medical Journal, Denver, Colo

August

80 *Need of Earlier Diagnosis J N Hall Denver
81 Case of Lipoma of Spinal Cord F I Root, Salt Lake City

80—This article also appeared in the *Medical Record,* Aug 3, 1907

The Northwestern Lancet, Minneapolis

July 1

82 Public Care and Treatment of Insane O Copp Boston Mass
83 Artificial Congestive Hyperemia, after Professor Bier H A H Bouman Minneapolis
84 Clinical Symptoms and Diagnosis of Diphtheria. E K Green, Minneapolis
85 Fractures A F Hedback Minneapolis
86 Pneumodiplococcic Infection of a Clean Wound. J H Beaty, St. Cloud

July 15

87 President's Address of South Dakota State Med Assn F J Ramsey Clark S D
88 Diagnosis and Treatment of Gastric Ulcer J W Bell, Minneapolis.

August 1

89 Infection of Uterus G C Barton Minneapolis
90 Hospitals for Acute and Removable Insane A M Barrett, Ann Arbor Mich
91 What Should the Practitioner Read? C E McCauley, Aberdeen S D
92 *Cretinism or Infantile Myxedema W Edwards Bowdle S D
93 Medical Expert Witness T L Hatch Owatonna Minn
94 *Rupture of Liver with Recovery W H Aurand Minneapolis
95 *Double Congenital Anterior Subluxation of Knees I S Geist Minneapolis

92 **Cretinism.**—Edwards reports the case of a girl, a cretin, 8 years old, who showed great improvement in her physical condition after ten months of irregular thyroid treatment During the first four months of treatment the patient grew four inches She did not, however, make any very great progress intellectually

94 **Rupture of Liver**—Aurand reports the case of a man who sustained a rupture of the liver following a severe fall on the abdomen Three days after the injury the abdomen had become so distended with fluid that a laparotomy was done The abdomen was full of dark blood, and a band of adhesions was found around the cecum, which caused a total obstruction of the bowel, which set in after the injury The rupture in the liver was large enough to contain the hand of the operator The abdomen was washed out with normal saline solution, after the adhesions were removed, and the wound was closed without drainage In spite of a localized suppurative peritonitis the patient eventually recovered

95 **Double Congenital Anterior Subluxation of the Knees**—In the case reported by Geist, an infant, 10 months old, there was present at birth hyperextension with total impossibility of flexion at the knees, and extreme pes equinus When the patient was first seen, the knees were held in an extended position and could be flexed only slightly, without causing pain A certain degree of hyperextension could be produced passively There was little range of active motion Geist believes that the cause of the condition in this case was the abnormal position of the fetus *in utero*, together with the increase of intra abdominal pressure So far nothing has been done to correct the deformity

The Military Surgeon, Carlisle, Pa.

July

96 Training of Medical Officer of State Forces Best to Qualify Him for Local Service and for Mobilization with National Troops J E Pilcher Carlisle Pa
97 French Impressions of the Surgery of the Russo-Japanese War C S Butler Mass Volunteer Militia
98 Work of Army Board for Study of Tropical Diseases in the Philippines P M Ashburn and C F Craig U S Army
99 Epidemic of Cerebrospinal Meningitis at the U S Naval Training Station at Newport, R. I N J Blackwood U S Navy and others
100 Treatment and Prevention of Surgical Shock. J L. Medina Nicaragua
101 Case of Traumatic Displacement of Right Kidney with Rupture of Right Lower Lobe of Liver M. W Houghton U S P H and M. H. S

August

102 Splenic Abscess as Complication of Grave Malarial Infection W H Bell U S Navy
103 Wounds of Colon Treated without Operation P R Egan U S Army
104 Epidemic of Cerebrospinal Meningitis Occurring at U S Naval Training Station at Newport R I N J Blackwood M S Guest J H Iden and J L. Neilson U S Navy
105 *Use of Amyl Nitrite for Control of Hemorrhage in Bullet Wounds of Lung E A Sweet U S P H and M. H S
106 Mexican Model of Military Medicine Chest A. Ross Mexican Army
107 Infantile Scorbutus. W P Chamberlain U S Army
108 Service of Michigan National Guard in Mobilization at Fort Benjamin Harrison J F Henkel Mich. N G
109 Tropical Diseases in Philippines P M. Ashburn and C F Craig U S Army

105 **Amyl Nitrite to Control Pulmonary Hemorrhage**—Sweet records excellent results following the use of amyl nitrite in cases of hemorrhage following bullet wounds of the lungs Use is made of the 5 minim pearls The administration is the same as in cases of asthma or angina pectoris When it is desired to maintain the effect, Sweet administers nitroglycerin and sodium nitrite in small and oft repeated doses

American Medicine, Philadelphia.

July

110 Relation of Incorrect and Correct Refraction to Systemic Diseases G M Gould Philadelphia
111 *Transvesical Operation for Relief of Prostatism in the Aged C. E. Bowers Wichita Kan
112 Inflammation of Air Passages within Lung W H Birchmore Brooklyn
113 Formation of Fat Globule of Milk H B Wood Philadelphia
114 *Lorenz Operation for Bloodless Reduction of Congenital Hip Dislocation W C Stern Cleveland O
115 Schirrhus Cancer Simulating Hypertrophic Stenosis of Pylorus J H Murdoch Pittsburg Pa

111 **Transvesical Operation for Prostatism**—In twelve consecutive cases of senile prostatism in which an operation was done by Bowers there was relief of prostatic symptoms ability to empty the bladder by urethra without pain, and the termination of the cystitis, without mortality or sequels Bowers emphasizes first, that prostatism is due to other causes than hypertrophy of the prostate gland, second, that the transvesical operation for prostatism has attained a sufficient degree of perfection to be recommended to this class of pitiable sufferers, with the assurance of a cure if availed of before the inflammatory process has reached the kidney and arrested its functional activity, third, that these patients should not be submitted to catheterism in the future as they have in the past, until it is hopeless to interfere surgically

114 **Lorenz Operation in Congenital Hip Dislocation**—Stern commends very highly the Lorenz operation for the bloodless reduction of congenital hip dislocation He has made use of the method in 12 cases with 6 anatomic cures, 1 perfect functional result, 3 good functional results, and transposition with good function, and 1 failure

Wisconsin Medical Journal, Milwaukee

July

116 Psychotherapy F C Studley Milwaukee
117 *Prolapse of Umbilical Cord J H Sure Milwaukee
118 Professional Fellowship J W Epley New Richmond Wis
119 Breech Presentation G A Hipke Milwaukee

117 **Prolapse of Umbilical Cord**—Sure reports four cases with a fetal mortality of 50 per cent None of the mothers died They were all multipara, and in each case previous labors had been normal Sure presents a very complete review of the literature on this subject, and recommends the following method of procedure in individual cases In absence of signs of compression, transverse presentation or incomplete dilatation, wait for sufficient dilatation, and when considered sufficient, turn and extract immediately If compression occurs during this period, turn, replace the cord, bring down one foot and do not extract until dilatation is complete The reposition should be done after the version When the breech is brought over the inlet, replace the cord and engage the breech thus blocking its way Reposition as the operation of election is useless, for the prolapse will recur

Interstate Medical Journal, St Louis

August

120 A Medical Career and the Intellectual Life C A Wood Chicago
121 *Statistical Study of Relation between Height of Longitudinal Arch and Functions of Foot P Hoffmann St Louis
122 Two Cases of Infection with a Gas Forming Bacillus Recovery R C Loving, U S Army

121 **Relation Between Height of Longitudinal Arch and Functions of Foot**—While examining the feet of primitive peoples the great variety of impression records obtained from feet that were functionally normal led Hoffmann to study statistically the question of relation between the height of the longitudinal arch and the usefulness of the foot His findings are contained in the following summary 1 There is no one type of arch that is normal 2 Contrary to common opinion and teaching, the height and shape of the longitudinal arch are of no value in estimating the strength or usefulness of the foot 3 Normal feet present high, medium and low arches in nearly the same proportions as do feet with weakened arches 4 Weakness of the longitudinal arch rarely results in its depression, and flat foot as a pathologic entity is not common 5 The impression records of the longitudinal arch, commonly made by surgeons, are of no value in the diagnosis of arch strain or weakness, so called flat foot, whose symptoms are dependent on a weakened arch and not on its lowness except in so far as this lowness is a transition from an original higher condition with concomitant change in the relationship of the tarsal bones, which transition occurs by far less often than is generally believed

Journal Missouri State Medical Association, St Louis

August

123 *Surgical Treatment of Enlarged Prostate C E Fulton, Springfield Mo
124 *Prostatectomy C I Roberts Kansas City Mo
125 Forms of Scabies as Seen in Private Practice W Frick, Kansas City Mo
126 The Medical Profession and the Law B B Cahoon, Sr, Fredericktown, Mo
127 Mastoiditis with Pyuria and Intermittent Heart Beat. J S Wever, Kansas City, Mo

123 Surgery of Prostate—Fulton emphasizes the advantage of prostatectomy over what he terms the slipshod habit of providing the prostatic with a catheter to be used by himself at his own pleasure

124 Id—Roberts commends the perineal route as being vastly superior to the suprapubic, because the former provides a natural drainage

American Quarterly of Roentgenology, Pittsburg

No 3

128 *Standardization of Radiations C E S Phillips, London, England*
129 *Estimation of Roentgen Dosage. H G Piffard, New York
130 *New Direct Reading Roentgen Ray Meter G C Johnson, Pittsburg Pa
131 Résumé of Radiometric Dosage of Roentgen Therapy M K. Kassabian, Philadelphia
132 Advantages of Use of Roentgen Ray Filters in Radiotherapeutics R Morton, London
133 *Changes Produced in Kidneys by Roentgen Irradiation A S Warthin, Ann Arbor Mich
134 *The Roentgen Ray in Diseases of Blood and Blood Forming Organs H K Pancoast Philadelphia.
135 Present Status of Roentgen Therapy G H Stover Denver, Colo

129, 130—Abstracted in The Journal, Sept 15, 1906, page 888

133, 134—Abstracted in The Journal, Sept 15, 1906, page 889

West Virginia Medical Journal, Wheeling

July

136 President's Address West Virginia State Med Assn W W Golden, Elkins, W Va
137 Ten Years Experience in Obstetrics C B Williams, Philippi W Va
138 Amebic Dysentery in Sailors at Port of New York J A. Nydegger, U S P H and M H S

Iowa Medical Journal, Des Moines

July

139 Medical Jurisprudence A P Olsen Leon, Iowa.

Maryland Medical Journal Baltimore

July

140 The Logical Basis of Neurasthenia A K Bond Baltimore Md
141 Dislocation of a Cartilage Ring of Trachea Causing Loss of Voice S B Muncaster Washington D C

Journal of the Michigan State Medical Society, Detroit

July

142 *Methods of Diagnosis J B Herrick Chicago
143 *Use of Bacterial Vaccines in Surgery W H Hutchings, Detroit
144 Therapeutic Bacterial Inoculation With and Without the Opsonic Index as a Guide A P Ohlmacher Detroit
145 Examination of the Insane J F Canavan Traverse City
146 Résumé of Some Accomplishments of the Michigan State Board for 1906 B D Harison Detroit
147 Examination of Patients Suffering from Stomach Disorders H Van den Berg Grand Rapids
148 *Empyema R Y Ferguson Pontiac

142—Abstracted in The Journal, July 6, 1907, page 71

143—Abstracted in The Journal, July 13 1907 page 178

148—Abstracted in The Journal, April 13, 1907, page 1292

FOREIGN

Titles marked with an asterisk (*) are abstracted below Clinical lectures single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

July 27

1 Outbreak of Epidemic Cerebrospinal Meningitis W Robertson
2 *Ocular Symptoms in Cerebrospinal Meningitis A J Ballantyne
3 Infective Cyclitis in Relation to Penetrating Wounds of Eyeball P Dunn
4 Medicine in Ancient Greece G Lorimer
5 *Abnormal Fat Assimilation Associated with Diseases of Intestine O T Williams
6 *Etiology and Pathologic Histology of Beriberi R T Hewlett and W F Korté
7 *Arthritis and Erythema Nodosum J O Symes.
8 *Interstitial Pancreatitis in Relation to Sprue A W M Robson
9 *Hypertrophic Cirrhosis of Liver in Infant H S Willson
10 *Poisoning by Bromoform M Benson
11 *Cases Treated by Bacterial Vaccines* M L B Rodd

2 Ocular Symptoms in Cerebrospinal Meningitis—Ballantyne investigated the condition of the eyes in 73 cases of cerebrospinal meningitis, including patients in all stages of the disease Eye symptoms of any kind were absent only in four cases, two of these patients being convalescent Abnormalities of the palpebral fissures were noted in 17 cases retraction of the eyelids in 15 cases, acute catarrhal conjunctivitis in 13 cases, corneal ulcer in one case, inequality of the pupils in 18 cases, strabismus in 15 cases Ballantyne says that, perhaps, the most striking feature was the great variations in the symptoms in the same patient from day to day and even in the course of a single examination No evidence of iritis, cyclitis or choroiditis was found in any of the cases Among other symptoms noted were blepharospasm, changes in the pupil reflexes, optic neuritis, conjunctival hemorrhages, and faulty muscle action As to the bearing of these symptoms on prognosis, Ballantyne expresses the opinion that retraction of the eyelids, corneal complications, absence of the pupil reflexes, true nystagmus, lid winking, combined with jerky movements of the eyes, and optic neuritis are among the symptoms of graver significance

5 Abnormal Fat Assimilation.—The observations recorded by Williams tend to show that there are conditions in the intestines, in which certain soaps or other insoluble compounds of fatty acids are not absorbed by the intestinal mucous membrane, and that with the presence of these conditions, certain diseases of the alimentary tract are related The analyses given show that true intestinal sand, appendix concretions, and some bodies formed in the intestine are largely formed of fats and soaps Williams believes that the constitution of these bodies and their relation to each other in chemical constitution throws much light on the etiology of appendicitis and mucous colitis, and possibly on the underlying factors in certain diseases acompanied by colic

6 Beriberi—Hewlett and De Korté suggest that beriberi is a protozoan infection that the infecting agent is eliminated in the urine, and that the urine is the source of infection

7 Arthritis and Erythema Nodosum—Symes says that in a large proportion of cases of erythema nodosum it is difficult to recognize any rheumatic taint, and that even when arthritis is present, it may differ very remarkably from that found in acute rheumatic fever His experience has been that the signs or a history of chorea, endocarditis or arthritis, are not found in more than 10 per cent of all cases of erythema nodosum

8 Pancreatitis and Sprue—Robson thinks that it is highly probable that some of the cases diagnosed as sprue owe their origin to inflammatory disturbance of the pancreas, and that in other cases the pancreatic disease forms an important complication requiring treatment

9 Cirrhosis of Liver—Willson records a case of congenital syphilitic cirrhosis of the liver, which proved fatal to a child three months old He believes that the changes in the liver probably commenced during intrauterine life The liver is said to have been of enormous size, but unfortunately was not weighed

10 Bromoform Poisoning—In the case reported by Benson the bromoform was administered to a child ill with whooping cough The maximum dose was one minim The author fails to mention the number of doses given but cautions against the use of the drug

The Lancet, London

July 27

12 Plague W J R Simpson
13 General Surgical Anesthesia F W Hewitt
14 *Carriage of Infection by Flies R M Buchanan
15 *New Microscopic Diagnostic Method and Simple Methods for Staining Liquid Blood R Ross J E Slavin Moore and C E Walker
16 *Case of Cerebrospinal Meningitis C Rundle T C Mottram R S Williams J Orr A E Williams
17 Study of Conditions Producing Anomalous Reaction in Testing Urine for Sugar with Fehling's Solution (To be continued) F W Pavy

18 Cerebral Meningitis During Pregnancy J D Williamson
19 Treatment of Trypanosomiasis A Merenstein
20 *Cerebral Hyperemia as Factor in Therapeutic Action of Lumbar Puncture F C Eve

14 **Carriage of Infection by Flies**—Buchanan records experiments in demonstration of the part which the common house fly and the blue bottle fly are capable of playing as agents in carrying and spreading infection The diseases which were made the subject of experiments were typhoid, swine fever, staphylococcal abscess, pulmonary tuberculosis and anthrax The experiments showed that flies alighting on any substance containing pathogenic germs are capable of carrying away these organisms in large numbers on their feet and of depositing them in gradually diminishing numbers on surface after surface with which they come in contact They further demonstrate the necessity of the exercise of stringent measures to prevent the access of flies to all sources of infection and to protect food of all kinds against flies alighting on it.

15 **New Microscopic Diagnostic Method.**—The authors of this communication, Ross, Moore and Walker, again call attention to certain strings of granules called by them chromolinin granulations, which can be found by means of appropriate staining in some of the red corpuscles in health and disease They infer that an excessive percentage of corpuscles with the granulation is indicative of the discharge of the red corpuscles into the blood stream at an earlier stage in their development than usual, due probably to processes of blood construction and regeneration In health these granulations occur in about 1 per cent of the corpuscles In a case of tropical abscess of the liver they were found in 6 6 per cent, in a case of chronic malarial anemia in 11 5 per cent, while in ankylostomiasis, kala azar and rats with trypanosomes and spirochetes they were detected very frequently The stain used is a polychrome saturated solution of methylene blue, in 0 5 per cent salt solution

16 **Cerebrospinal Meningitis.**—Rundle, Mottram and Williams report a case of cerebrospinal meningitis from which the specific organism was isolated, and the patient treated successfully with a vaccine made from cultures of the germ in sterile normal saline solution

20 **Cerebral Hyperemia and Lumbar Puncture.**—Eve considers it justifiable to try lumbar puncture in a variety of acute or subacute cerebral affections, which have resisted other treatment or are tending to become chronic He states however, that it should not be tried until other remedies have failed

Journal of Tropical Medicine and Hygiene, London

July 15

21 Plague W J Simpson
22 Psycho-physical Aspects of Climate F Pearse.

International Medical Journal of Australasia, Melbourne

June 20

23 *The Cecum and Vermiform Appendix F J A. Berry
24 *Acute Appendicitis in Childhood F H Cole
25 *Gastrectomy for Carcinoma of the Stomach G A Syme
26 *Case of Podalgia. F Bird and T Smith
27 Classification of Disease and Causes of Death. G H Knibbs

23 **Cecum and Vermiform Appendix**—Berry discusses the embryology and anatomy of these two structures as they are understood at the present time

24 **Acute Appendicitis in Childhood.**—Cole discusses the clinical history of acute appendicitis in children He says that aperients are to be avoided even though constipation exists after improper feeding, and that every case should be deemed surgical with a view to operation, immediate or deferred Waiting he says, is permissible only for the purpose of securing an improved condition of the patient Operation should be done within twenty four hours if the diagnosis is absolute, and should be done in every case after one attack

25 **Gastrectomy for Carcinoma of the Stomach.**—Syme is satisfied that if cases of cancer of the stomach came to operation early the recurrence would be delayed He believes that as much as possible of the stomach should be removed, even beyond the Hartmann Mikulicz line He reports five cases

26 **Podalgia**—Bird and Smith report four cases of podalgia, in which they refer the pain to spicular osseous prolongations from the hinder end of the os calcis which were present in each case All other causes for the affection could be ruled out The symptoms were the same in all the cases Pain in the heel of slow onset and of gradually increasing severity, referred to the hinder end of the os calcis, with severer paroxysms radiating to the rest of the foot The spikes of bone were removed through a small lateral incision, parallel to the border of the sole and carried down to the calcaneal tuberosity The patients remained in bed for a few days and then resumed their ordinary duties

Clinical Journal, London

July

28 Injuries to Superficies of the Eye N B Harman

Presse Medicale, Paris

29 (XV Nos 41-43 pp 329 352) *Sero reaction in Syphilis (Séro-réaction de la syphilis) C Levaditi
30 *Puncture Better than Scarification for Revaccination (Piqure ou grattage?) Saint Yves Ménard
31 Appendicular Dyspepsia (Dyspepsie app) J Foucaud and L Salignat
32 Case of Perforation of Epigastric Artery in Abdominal Paracentesis (Perforation de l art epigastrique) C Lian
33 *Palliative Surgical Treatment of Cancer of Cervix (Castration ovarienne, ligature des hypogastriques curage du col.) F Jayle
34 *Congenital Cardiovascular Affections in Inherited Syphilis (Affections cardiovasc cong héré syph) L Landouzy and Laederich

29 **Sero Reaction of Syphilis**—Levaditi reviews what has been accomplished with the hemolytic blood test and its history, adding that the method is too complicated for general use and that efforts should be directed now toward simplification of the technic

30 **Puncture or Scarification in Revaccination**—Ménard advocates a prick or pricks rather than scratches in revaccinations Inflammatory phenomena are too liable to accompany the scarification, as the vaccinal reaction is needlessly intense and extensive in this case. When the vaccine is just pricked in, the reaction is reduced to the minimum and complications are avoided

33 **Palliative Treatment of Cancer of the Uterine Cervix.**—Jayle points out that in women who are still menstruating a cancer generally runs a more rapid course For this reason he advises removal of both ovaries In addition, to reduce the flow of blood to the neoplasm he applies a double ligature to both of the hypogastric arteries, leaving a space of about 1 cm between the ligatures All this is easily done when the abdomen is opened and the growth found inoperable If the surface of the growth indicates it, he curettes away the epitheliomatous vegetations and cauterizes with the actual cautery

34.—See summary in The Journal, July 6, 1907, page 01

Revue de Chirurgie, Paris

35 (XXVII No 5 pp 713 806) *Persistent Priapism (Priapisme prolongé) F Terrier and C Dujarier
36 *Ruptures of Lung without Fracture of Ribs (Ruptures du poumon sans fractures de côte) A. Schwartz and P Dreyfus
37 *Perineal Extirpation of Cancers of Anus and Rectum (Extirpation périnéale) X Delore and A Challer
38 *Treatment of Glandular Cysts of Pancreas. (Kystes gland du pancréas) P Hardouin

35 **Persistent Priapism.**—Terrier and Dujarier give the details of a case of idiopathic persistent priapism and summarize 48 cases of this condition found in the literature In 16 of the 48 cases the condition was referable to leukemia, in 2 to a fall on the perineum or kick from a horse, and in 20 no cause could be discovered The postmortem findings in 4 cases and the findings during operations in 10 others are reviewed Good results were obtained in 3 out of the 10 cases treated by incision of one or both corpora cavernosa Unfortunately, conditions in the parts favor infection In 2 cases the colon bacillus was found in the blood at the first incision In the case described there was suppuration, and part of the right corpus cavernosum was thrown off in an eschar after which healing proceeded rapidly, with no recurrence of the priapism

36 **Ruptures of Lung Without Fracture of Ribs**—Schwarz and Dreyfus report a case in which a young teamster was run over by his wagon, the wheel passing over the chest from the left side. No trace of fracture could be discovered, but the patient complained of intense pain in his chest, and there

was considerable cyanosis and blood stained expectoration A large subcutaneous emphysema developed soon after the accident, starting at the base of the neck with hemo pneumothorax Autopsy two days later revealed numerous small tears in the lungs without any considerable hemorrhage Twenty-nine cases of similar contusion of the lung without fracture of ribs are on record The elasticity of the chest walls in youth explains the absence of fractures, but the costal cartilages may be dislocated as was noticed in the case reported The prognosis is always grave, although recoveries have been observed Death occurs from asphyxia or hemorrhage or from infectious complications Pneumonia is favored by the accumulation of blood and even after healing a place of lesser resistance is left, predisposing to tuberculosis Emphysema, starting in the neck, is an important differentiating sign Treatment is symptomatic, puncture or pleurotomy should be avoided if possible as liable to be followed by infection In one case on record, the pleura was opened after resection of the fifth rib, but no rupture was found A large stiff drain was left in the wound the outer end being inserted in a soft depressible tube The air emerged through the drain during expiration, but did not enter during inspiration, as the outer tube collapsed This patient recovered The authors state that no attempt should be made to suture the wound in the lung unless to arrest fulminating hemorrhage Under other circumstances repose and one or more punctures will suffice Richter sutured the lung in his case, but the patient *died in two days*

37 **Removal Through Perineum of Cancers of Rectum and Anus**—Delore and Chalier relate the particulars of 19 cases in which they performed this operation All but 5 of the patients were women, and all but one were over 50 The patient lies on his back, the hips projecting beyond the edge of the table The thighs are held by assistants, flexed on the pelvis in such a way that the anus protrudes and points upward It is sutured together and an incision is made encircling the anus, with a lengthwise median extension below and above, the latter incision extending to the coccyx The coccyx is resected at its base and the entire rectum with its sheath and ganglia, is extirpated in a single piece The resection of the coccyx facilitates the detachment of the rectum, which is commenced at the back and thus better insight over the conditions is obtained One of the patients thus operated on eight years ago is still in good health, and another, who succumbed to *intercurrent* tuberculosis a year and a half after the operation, showed no signs of recurrence One patient operated on four years ago is in good health to date, and is free from incontinence Two patients succumbed soon after the operation, one to acute peritonitis when all seemed to be doing well, and another in collapse after a comparatively simple operation The ultimate outcome is not known in five cases but in none of the others has there been recurrence The details of the various cases are given, with a summary in tabulated form for comparison

38 **Treatment of Glandular Cysts of the Pancreas**—Hardouin diagnosed a fluid tumor behind the stomach probably in the pancreas or lower part of the liver Through a median laparotomy the tumor was punctured and two liters of a turbid, greenish brown fluid were evacuated The cyst was then incised and sponged dry, but it could not be removed as it was adherent to the stomach and adjacent structures An incision, 15 cm long, was then made in the lumbar region, and two large drains were introduced into the cyst, after which the abdominal wound was sutured The lumbar fistula healed completely in three months and the patient, a farmer of 48, has been in good health since There was a history of contusion a few months before the tumor was first noticed and traumatism was also mentioned in 17 out of 94 cases on record The fluid obtained from the cyst was evidently of pancreatic origin Lumbar drainage should be the rule Hardouin thinks in all cases of pancreatic cysts for obvious reasons He appends the bibliography for the last six years

Dermatologische Zeitschrift, Berlin.

39 (XIV No 2 pp 67 170) Relations of Pale Spirochete to Skin Pigment in Syphilitic Efflorescences. (Beziehungen der Sp pall zum Hautpigment) B Lipschütz
40 Spirochetal Affections (Spirochaetenerkrankungen) G Scherber
41 Histology of Verrucous Lichen Ruber (Lichen rub verr) M D Polano
42 (No 3 pp 131 196) *How to Make Colored Wax Casts (Farbige Wachsabdrucke) G T Photinos
43 Five Cases of Paraurethral Suppuration in Women (Paraurethrale Eiterung) O O Fellner
44 (No 4 pp 197-262) *New Infection of Persons with Inherited Syphilis and Reinfection in General (Neuinfektion Hereditärsyphilitiker und Reinfektion) C Stern
45 Three Cases of Psoriasis in Infants (Psor vulg bei Säuglingen) A Friederichs
46 (No 5 pp 263 328) A Vacciniform Skin Eruption (Hydroa vacc—Bazin) M Wolters

42 **Wax Casts of Dermatologic Specimens**—Photinos took a course of training in making casts under Lassar's modeler and has since been making a collection which now amounts to 150 casts The modeler at the Saint-Louis Hospital in Paris keeps the composition of his wax a secret, but at Berlin a mixture of wax, ceresin and paraffin is used Photinos expatiates on the invaluable assistance of a collection of such casts for the practitioner and specialist, and then gives minute directions how to make the wax casts and paint them

44 **New Infection of Persons with Inherited and Acquired Syphilis**—Stern's patient was a man of 28 who had a primary syphilitic sore with numerous pale spirochetes, differing in no respect from an ordinary primary infection with syphilis, and yet the man presented the unmistakable signs of inherited syphilis or syphilis acquired in early infancy, with tertiary phenomena This makes the ninth case on record Stern remarks, *in which persons with syphilis in infancy*, either inherited or acquired during the first weeks of life, acquired a fresh infection in early adult life He summarizes 80 cases of reinfection in cases of acquired syphilis, and draws the conclusion that the reinfection in many instances is conclusive testimony to the complete cure of the primary infection He emphasizes the necessity for teaching patients this, so that those who have had syphilis in the past may guard against contracting it anew instead of considering themselves immune His experience also indicates that a strong, resistant organism may pass through syphilis with the organs comparatively intact *and escape the dreaded consequences The pessimistic idea* that a person once infected is always infected and immune to future infection should be combated, he declares, for numerous and obvious reasons

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

47 (XXXIII, No 24, pp 95 992) *Malingering and Its Detection in Internal Medicine (Krankheitssimulation und dissimulation und ihre Entlarvung in der inneren Medizin) Rumpf
48 *Detection of Simulation in Mental Affections (Entlarvung von Simulation bei Geisteskranken) M Koppen
49 *Detection of Malingering in Industrial Accident Surgery (Simulation und ihre Entlarvung in der Unfallchirurgie) *G Ledderhose*
50 *Detection of Malingering in Eye Affections (Augenleiden) Groenouw
51 *Detection of Malingering in Ear Affections (Ohrkrankheiten) Stenger
52 *Malingering Among Soldiers (Simulation beim Militär) Schill

47 to 52 **Malingering**—The German legislation for compulsory insurance against old age, industrial accidents and sickness has led to simulation of various affections by the insured in many instances or to malingering in other ways to obtain the sick benefit or indemnity This number of the *Deutsche med Wochenschrift* is almost entirely devoted to the subject, *treated from* the standpoint of various specialties

Deutsche Zeitschrift f Chirurgie, Leipsic

53 (LXXXVII Nos 1 3 pp 1 312) *Treatment of Injuries of Radial Nerve (Verletzungen des N radialis) Borchard
54 Hydro pyo nephroses and Renal Calculi (Beiträge zur Nierenchirurgie) H Doering
55 Traumatic Ruptures of Liver with Expulsion Later of Large Sequesters of Liver Substance (Leberrupturen) J Fertig
56 Pathology of Alveolar Echinococcus (Alveolarechinococcus) A Jenckel
57 Exposure of Central Part of Middle Cranial Fossa and Hypophysis (Freilegung der Schädelgrube etc) W Braun
58 Appendicitis and Icterus (App und Ikt) G Aldehoff
59 Ileus with Appendicitis (Ileus bei App) H Haeckel
60 Meckel's Diverticulum as Cause of Ileus (Meckelsches Div als Ursache des Darmverschlusses) A Lickh
61 Spontaneous Gangrene of Finger Tips of Left Hand (Spon Gang an einzelnen Fingerkuppen) Evers
62 Tumors of Scrotum (Haemo Lymphangloma cavernosum partim cystoides scroti) W Rosenberger

63 Bilateral Lacerated Fracture of Tubercle of Tibia (Rissfraktur der Tub tibiae) F Linkenheld
64 *Surgery in Naval Warfare (Seekriegschir) Matthiolus
65 *Operative Treatment of Gastric Cancer (Chir des Magencarcinoms) O Creite

53 **Injuries of Radial Nerve**—The ultimate outcome of operative treatment was a complete cure in the three cases reported Great care was taken to remove all proliferation of bone, sharp edges of bone and cicatricial tissue in the soft parts, and to ensure perfect healing of the wound with the nerve adjusted between muscular tissue in such a way that further injury would be avoided Borchard asserts that direct union of the severed stumps is preferable to all plastic operations, and that it is advisable to resect the bone if necessary to obtain direct union It is generally impossible to stretch the nerve to bridge a gap of more than 2 or 3 cm, although von Bergmann accomplished it with a defect of 7 cm by extreme flexion of the wrist Primary suture is more promising than later operations if asepsis can be secured The earlier the operation the better the ultimate functional outcome In 12 cases Borchard sutured the severed nerve in 2, in 3 cases mobilization of the nerve from adhesions proved sufficient, in 3 others cicatricial tissue had to be excised and the nerve imbedded in muscle tissue, in another case the dislocated head of the radius had to be resected, and in another a nerve grafting operation was required to bridge a gap of 11 or 12 cm The after treatment is extremely important, regenerative processes should be stimulated by massage and baths which also prevent contraction of the muscles and stiffness of the joints This should be supplemented by electricity to hasten restoration of conductibility

64 **Surgery in Naval Engagements**—Matthiolus discusses the experiences on the battleships during the Russo Japanese war and says that they teach that the ship surgeon should thoroughly instruct the crew in the principles of first aid to the wounded, so that they could take better care of themselves and others in case of injury One of the Russian commanders was lying wounded on the deck, but said that it was unnecessary to call the surgeon as he had already bound up his wound with his handkerchief He also mentions that the ordinary first aid package is not sufficient, as the injuries from shells are generally multiple It is best to postpone all operations as much as possible, he says, until the wounded can be transferred to a hospital ship

65 **Results of Operative Treatment of Gastric Cancer**—Creite reviews the experiences at Braun's clinic at Göttingen with 241 cases of cancer of the stomach An operation was undertaken in all but 30 The stomach was resected in 50 cases and in 2 bilateral metastasis in the ovaries was observed later Seven of these patients are still in good health, 19 died during or soon after the operation, and 24 died later In 4 cases death occurred from heart failure soon after the operation, these patients were between 56 and 65 years of age, but four others over 60 bore the operation exceptionally well Postoperative pneumonia was the cause of death in 4 cases and 7 patients succumbed to suppurative peritonitis The sutures held well in all but one of this latter group of cases About 48 per cent of the patients died within a year, 33 per cent within two, and 19 per cent within three years One patient is still in good health more than fourteen years after the gastrectomy This patient, a woman of 49, had noticed pains in the stomach and loss of appetite for six months, and at about the fourth month discovered a lump in the stomach region There was no vomiting, but much emaciation The stomach was much dilated and a hard knobby tumor could be palpated in the vicinity of the umbilicus There was no free lactic acid The operation revealed a freely movable tumor in the pylorus which was resected and the stomach sutured to the duodenum after resection of 17 and 5 cm The patient has since been in perfect health, eats everything, and attends to her household duties

Münchener medizinische Wochenschrift.

66 (LIV No 22 pp 1065 1112) *Resemblances Between Sleeping Sickness and Progressive Paralysis. (Schlafkrankheit und prog Par) W Spielmeyer
67 *Roentgen Research on Stomach (Verwendung der R Strahlen zur Diagnose der Magenkrankheiten etc.) F M Groedel III.
68 Interpretation of Percussion Findings in Pleurisy with Effusion (Perkussion bei exsudativer Pleuritis) I Bachmann
69 Technic of Bacteriologic "Typhoid Bile Tube" Test (Blutanreicherung vermittels der "Typhusgallenröhre") H Kayser
70 Simplified Fehling Test for Sugar in Urine (Harnuntersuchungen in der Praxis) K Grube
71 Lead Poisoning from Bullets After Firearm Wounds (Bleivergiftung durch Geschosse) E Brantz
72 *Phimosis as Cause of Internal Affections in Boys (Phimose) Witzenhausen
73 New Device for Fastening and Compressing in Roentgen Work (Roentgenographie) Kaestle (Munich)
74 Instrumentarium for Public Vaccinator (Instrumentarium für den öffentlichen Impfarzt) A Groth (Ib)
75 Spool Tampon Case (Tamponbüchse) O Scheven
76 Historical Sketch of Scopolamin (Bilsenkrautextrakt als Narkoticum) G Klein

66 **Resemblance Between Sleeping Sickness and Progressive Paralysis.**—Spielmeyer presents evidence to show the close analogy between the pathologic anatomy of sleeping sickness and progressive paralysis This and other points of resemblance are explained by the comparative research on trypanosome and spirochete affections Schaudinn was able to discover forms showing transitions between trypanosomes and spirochetes, demonstrating the family connection between them Pathologic anatomy and clinical experience are confirming these results of purely biologic research, and the reverse is also true, that biologic research is throwing new light on the clinic and on pathology

67 **Roentgen Examination of Shape, Size and Location of Stomach.**—Groedel gives a dozen illustrations of the normal and pathologic stomach examined with the Roentgen rays after ingestion of Rieder's bismuth test meal that is, gruel, spinach, hash or the like, to which a suspension of 40 or 50 gm of bismuth has been added and the whole mixture diluted with water or milk to a total of 400 gm

72 *Clinical Importance of Phimosis*—Witzenhausen reports four cases to sustain his assertion that phimosis is an important cause of internal affections in boys Greater attention should be paid to it, as it is liable to induce severe intestinal troubles, especially obstinate constipation and its consequences The injurious effects of the intestinal trouble may leave an indelible impress on the organism and interfere with normal development even long after the phimosis has been corrected. In one case the child had been under medical care for a long time, but the physician had overlooked or disregarded the phimosis, all disturbances vanished at once after its correction

Grèce Médicel, Syra, Greece

77 (IX, Nos 1-4, pp 1 8) *Pathogenesis of Bilious Hemoglobinuric Fever (Fièvre bilieuse hémoglobinurique) S J Kanellis.
78 *How Quinin Induces Hemoglobinuria (Hémoglobinurie) T Anastasiadès
79 Influence of Acute Malaria in Inducing Essential Manifestations in Liver Kiddeys, Blood and Capillaries (Influence du paludisme aigu) C Kassiopoulos
80 *Meningitis due to Malarial Infection (Méningites par suite de paludisme.) G C Pitaoulis
81 (Nos 5 7 pp 9 16) *Id. 7 G Iellos
82 *Treatment of Pneumonia During Malarial Cachexia. (Pneumonie etc.) S Theophanidis
83 *Rachitis (Rachitisme) I N Divaris
84 *Cerebrospinal Fluid in the Insane (Liquide céphalorachidien chez les aliénés) G Zilanakis

77 **Pathogenesis of Bilious Hemoglobinuric Fever**—Kanellis gives a historical sketch of the subject and then *states his own* impressions. He believes that any cause producing destruction of the red corpuscles is followed by a reaction on the part of the organism If the amount of hemoglobin liberated by the hemolysis is not very large, it is entirely arrested in the liver and transformed into bile pigment In that case urobilinuria may be observed In case of a larger amount of free hemoglobin, the liver transforms it into a larger quantity of bile pigments, and some pass into the blood, entailing icterus, and urobilinuria and choluria will then be observed When the amount of free hemoglobin is excessive, the liver is unable to work it all up into bile pigments, and some of it passes through the organ and is eliminated unmodified in the urine, and hemoglobinuria results The overworked liver and spleen become congested and enlarged, while the relics of the red corpuscles are eliminated through the kidneys causing albuminuria These three forms of the reaction of the organism to hemolysis are all observed he states in malarial infection, likewise transitional and blended forms

78. **How Quinin Induces Hemoglobinuria.**—Anastasiadès has become convinced that quinin may act locally on the sensibility of the mucous lining of the stomach. Apparently by vasomotor reflex action it affects some nerve center presiding over the production of hemoglobin, and hemoglobinuria results. He thinks that this might be prevented by giving some drug to soothe the stomach nerves and thus to inhibit reflex action. A sedative given with the quinin may ward off all danger from this source, he states, and prevent hemoglobinuria. The latter is rare when quinin is injected subcutaneously, and even in these rare cases the action of the quinin is due to the same mechanism, as it acts on the gastric mucosa by exosmosis.

80 and 81. **Meningitis of Malarial Origin.**—Lellos and others relate a number of instances of severe meningitis due apparently to malarial infection and promptly cured by quinin. They urge quinin treatment in all cases of meningitis in which malarial infection can be surmised.

82. **Pneumonia During Malarial Cachexia.**—Theophanidis relates a number of instances from his experience to illustrate the necessity for quinin treatment during pneumonia occurring in a person debilitated by malarial infection. The pneumonia should be treated as usual, but quinin should be given regularly, as, without it, the malaria reinforces the pneumonic invasion. When the malarial debility is extreme there is little hope for the patient in intercurrent pneumonia, but with moderate malarial debility, appropriately treated with quinin, he was able to save two thirds of his patients.

83. **Rachitis.**—Dinanis thinks that rachitis can be avoided by breast feeding. He states that the affection is unknown in Japan, because Japanese women nurse their children.

84. **Cerebrospinal Fluid in the Insane.**—Zilanakis examined the fluid in 107 insane patients, making 160 examinations. He found that lymphocytosis in the cerebrospinal fluid is one of the earliest and most constant signs of general paralysis. It was pronounced in all but 3 out of 53 patients with general paralysis. In these exceptions the affection was in an advanced stage in 2 and in an arrested, incipient phase in the other. The lymphocytosis was always most pronounced in the acute and progressive stages and the large mononuclears were also most abundant in these phases of the paralysis, while the polynuclears were comparatively few or absent altogether. The proportion of albumin in the fluid was always found high in general paralysis, seldom below 1 gm. to the liter, and only once above 3 gm. The increase in the proportion of albumin seems to be progressive and to parallel the course of the paralysis, even after the lymphocytosis has commenced to decline as the affection becomes more and more chronic. In one case the fluid was yellow. Progressive doses of opium are liable to increase the number of leucocytes found in the fluid, sometimes inducing actual lymphocytosis. The findings were constantly negative in the cases of dementia, arteriosclerosis and other affections in the insane. Even a *slight tendency to lymphocytosis* was observed only in the rarest cases, and never in arteriosclerosis. The alcoholic patients displayed the largest proportion of albumin in the cerebrospinal fluid outside of the cases of general paralysis, but it never reached 1 gm. to the liter. His experience indicates that the epileptiform attacks of *general paralysis are favorably influenced* by lumbar puncture.

Nordiskt Medicinskt Arkiv, Stockholm.

85 (XXXIX, Internal Medicine, No. 4.) *Diet in Kidney Affections. (*Diätetik der Nierenkrankheiten.*) K. Hanssen.
86 *Smallpox in Antiquity. (*La variole dans l'Ancien Testament et dans le papyrus Ebers.*) B. Ebbell.

85. **Diet in Kidney Affections.**—Hanssen tabulates the findings in regard to *the metabolism of a number of persons on* different diets. They show that the amount of solids eliminated in the urine is as large on a strict milk diet as on a meat diet. *The demands on the kidneys are thus as high on* a milk diet as when meat is ingested. Fats and carbohydrates, *on the contrary, made far less demands on the kidneys, the latter less than the fats.* He confirms the reliability of the "variability test" to determine the functional capacity of the kidneys (described in The Journal, Feb. 16, 1907, page 674). His conclusions are that a predominant or exclusive diet of carbohydrates with a little fat is indicated in all cases in which *the functional capacity* of the kidneys is reduced to or below the limits of normal sufficiency. Milk *and meat*, providing the same amount of calories, cause elimination through the kidneys of about the same amount of molecules, while materially smaller amounts of solid elements are eliminated through the kidneys on a diet of carbohydrates with a little fat. He regards a maximal specific gravity of 1.014 or 1.015 under the "variability test" of the urine as an indication that the limits of sufficiency of the kidneys have been reached, and that meat and milk should be restricted. If the specific gravity does not rise higher than 1.013 or 1.014, or there are signs of retention, then meat and milk should be entirely or almost entirely suppressed. In case of uremia nothing should be allowed but gruels with milk sugar. This takes the place of milk in regard to diuretic action.

86. **Smallpox in the Old Testament and in the Ebers Papyrus.**—Ebbell practiced a number of years in Madagascar and was astonished to find the nomenclature of diseases so extensive and well defined in the native language. He remarks that this has also been the experience of others among various peoples of the same stage of civilization or lack of it, and he argues that the same probably applies to the peoples of antiquity. They had undoubtedly a correct idea of various diseases, although unable to describe them correctly. The names bestowed on various diseases designated special well defined affections. He reviews the pathology of the Old Testament and of the Ebers papyrus, presenting arguments to prove that the sixth plague in Egypt and Job's affliction were both smallpox. All Job's complaints might apply to smallpox, as also all the other references to *"schechin."* The Ebers papyrus, he says, also presents evidence that smallpox was known in Egypt at least 2,000 B. C.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

DISEASES OF THE INTESTINES AND PERITONEUM. By Prof. Dr. Hermann Nothnagel, Late Professor of Special Pathology and Therapy, University of Vienna. Edited With Additions, by H. D. Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital. Second Edition, Thoroughly Revised. Authorized Translation from the German under the Editorial Supervision of Alfred Stengel, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Cloth. Pp. 1059. Price, $5.00 net. Philadelphia: W. B. Saunders Company, 1907.

MORRIS'S HUMAN ANATOMY. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M.A., and M.B. Lond., F.R.C.S. Eng., President of the Royal College of Surgeons, England, and J. Playfair McMurrich, A.M., Ph. D., Professor of Anatomy, University of Michigan. *Illustrated. Fourth Edition*, Revised and Enlarged. In Five Parts. Cloth. Part IV, Organs of Digestion, Etc. Price, $1.50. Part V, Surgical and Topographical Anatomy, Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1907.

MANUAL OF DISEASES OF THE EAR, NOSE AND THROAT. By John H. Johnson Kyle, B.S., M.D., Professor of Clinical Otology, Rhin*ology and Laryngology* in the Medical College of Indiana, Department of Medicine of Purdue University. Second Edition, Revised and Enlarged. With 169 Illustrations. Flexible Leather. Pp. 627. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

SURGERY: ITS PRINCIPLES AND PRACTICE. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Sugery, Jefferson Medical College, Philadelphia. Volume II, with 579 Illustrations. Cloth. Pp. 920. Price, $7.00 net. Philadelphia: W. B. Saunders Company, 1907.

MATERIA MEDICA AND PHARMACY. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital, etc. Seventh Edition, Revised. Cloth. Pp. 490. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1907.

MERCK'S 1907 INDEX (Third Edition). An Encyclopedia for the Chemist, Pharmacist and Physician. Stating the Names, Synonyms, etc., of the Chemicals and Drugs Used in Chemistry, Medicine and the Arts. Cloth. Pp. 472. New York: Merck & Co.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume xix. Nineteenth Session, Held at Baltimore, Maryland, Dec. 11-13, 1906. Edited by W. D. Haggard, M.D. Cloth. Pp. 565. Published by the Association, 1907.

TRANSACTIONS OF THE BERKS COUNTY (PA.) MEDICAL SOCIETY for the Year Ending December, 1906. Volume xi. Paper. Pp. 51. Reading, Pa.: Norton Printing House, 1907.

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Original Articles

A REVIEW OF RECENT WORK ON THE MECHANISM OF URINE FORMATION [*]

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PREFACE.

The study of the mechanism of urine formation is still one of the most fascinating fields of physiologic research, as is witnessed by the output of papers Aside from its direct practical application, the kidney owes its chief interest to the fact that, of all the glands, its functions seem best adapted to a simple physicochemical explanation, which, being once found, might furnish a key to the more complicated so-called vital phenomena On the other hand, its anatomic structure is peculiarly complex and makes a complete isolation of its functions a problem which continues to elude the utmost ingenuity of skilful investigators

Recourse must be had, therefore, to indirect methods to deductions and theories, which in turn rest on assumptions more or less definitely proved, or more or less probable Such methods are peculiarly exposed to the danger of "reasoning around a circle" The temptation is ever present to consider a more or less arbitrary assumption as an established fact, to accept that a theory is proved by results which are merely in agreement with it—without inquiring whether these results do not also agree with another theory

To avoid the dangers of these temptations, it is necessary, at every step, to examine into the real experimental basis for every assumption, and to inquire whether the suggested explanation is indeed the only one which is possible This separates at once those facts and theories which are definitely "proved," from those which are merely "indicated" as more or less 'probable" The neglect of this rigorous criticism can only result in unprofitable speculation Indeed, experience has shown that, in this subject at least, mere "probability" is a very unsafe guide, and that it is unprofitable to make degrees of the probable, the "six of one and seven of the other" style of argument.

It has seemed to me a not unpromising task to attempt the application of this rigid criterion of definite proof to the present status of our knowledge as reflected in the investigation of the last two years, going back to previous work when this was indispensable for a clear presentation of the subject The limits of this paper permit only a summary consideration of the principal investigations which bear directly on the main problem—the theory of urine formation Those desiring a more detailed description are referred to the several excellent compilations which have recently appeared[1]

INTRODUCTION

By way of introduction it may be said that these investigations emphasize that we are very far indeed from a clear conception of the kidney mechanism Most of the recent workers consider any simple physical explanation as entirely inadequate, and tend to lay increasing stress on the vital secretory factor On the other hand, the mechanical filtration and absorption theory of Ludwig is no longer opposed so sharply to the secretion theory of Heidenhain The discussion has shifted to the more profitable field of inquiring in how far the physical theories explain the facts, and what is left as an unexplained "vital" residuum In regard to this, opinions vary, and nearly every investigator has his own theory, but it is a sign of healthy progress that the investigations turn about this, as the real problem, rather than about two special theories

The differences of opinions and theories show that we are not yet in possession of sufficient facts to justify any *opinion* or theory In other words, the way of progress lies in emancipation from the bondage which the theories have imposed, and in the search for facts, more facts, and especially more definite facts When these have been collected and assimilated, it may appear that we should not speak of the mechanism of urine formation, in the singular, but of the mechanisms, in the plural In other words, the indications are that several mechanisms are involved, one or the other predominating according to *conditions*, so that an explanation which fits one case, may not fit another

THE EXCRETION OF PIGMENTS

One method which has been utilized in the attempt to define the function of the different cells of the kidney, consists in the introduction of substances which would be visible to these cells Heidenhain[2] and more recently Gurwitch,[3] Hober and Konigsberg[4] and Basler[5] injected pigments for this purpose On examining the kidneys histologically these pigments are seen as granules in the lumen and within the cells of the convoluted tubules (with a few pigments, also in Bowman's capsule) Evidently then these cells have the function of either secreting or of absorbing, pigment Heidenhain tried to show, by a series of experiments, that these granules are in the way of being secreted, but the adherents of Ludwig's theory contend that the results could also be interpreted as showing that they are being reabsorbed In the frog, however, this question has been definitely decided by Gurwitch in favor of secretion, for no pigment appears in the urine when the blood is prevented from going to the tubules, while its access to the glomeruli is unimpeded—an experiment which can be performed on the frog by tying the renal-portal vein Since the distribution of the pigment is quite similar in mammals, it seems natural to assume that it has the same explanation There is, however, some danger in transferring results obtained on frogs directly to mammals, for it is quite conceivable that the epithelial cells in the lower animals are less specialized and more phagocytic

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[*] Read in the Section on Pathology and Physiology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City June 1907 A portion of the article is omitted because of lack of space The complete article appears in the Transactions of the Section and in the author s reprints

[†] From the Pharmacologic Laboratory of the Medical Department of the Western Reserve University

[1] Asher (L) Die Lehre von der Harnabsonderung Biophysikalisches Centralblatt, 1906, ii, pp 1 33 65 bibliography, p 165

Beddard (A. P) The secretion of urine in Hill s Recent Advances in Physiology and Biochemistry 1905

Magnus (R) Die Tätigkeit der Niere Münch. med Wochschr, 1906 28 and 29

Metzner (R) Die Absonderung und Herausbeförderung des Harnes, in Nagel's Hanb d. Physiol d Menschen, vol ii, part 1, p 207

[2] Heidenhain Hermann's Handbuch der Physiology, 1883, v, part 1 p 309

[3] Gurwitch Pflüger s Archiv f d ges Physiol, 1902 xci 71

[4] Höber and Königsberg Pflüger s Archiv f. d. ges Physiol, 1905 cviii p 323

[5] Basler Pflüger s Archiv f. d ges. Physiol, 1906, cxii, p 203

This series of experiments, then, only proves definitely, that the epithelium of the convoluted tubules in frogs, is capable of secreting certain abnormal substances, and suggests that the same applies to mammals This is not a serious blow to the filtration-reabsorption theory, for it is granted by everyone that this epithelium has some secreting function, even in mammals, at least under abnormal conditions For instance, the excretion of sugar after phlorrhizin is attributed to them by practically everyone

MORPHOLOGIC CHANGES IN THE KIDNEY CELLS CONNECTED WITH DIURESIS

The morphologic characters of most gland-cells change during secretion Such changes would therefore be an important proof of secretory function, but nothing of the kind has ever been proved in the kidney These negative results do not suffice to discredit the secretion theory, for it is quite possible that the peculiar appearances in other gland cells are connected with the formation of new substances rather than with the elimination of substances existing ready-formed in the blood, which is the special function of the kidneys

THE SEPARATION OF THE TUBULAR AND GLOMERULAR FUNCTION IN THE FROG

The separate blood supply of the glomeruli and tubules in the frog was first utilized for the experimental separation of the functions of these two mechanisms by Nussbaum[11], who ligated the renal artery to exclude the glomeruli from the circulation His results were confirmed by Mosberg Marcuse and Halsey, but his interpretation was put in doubt when Adami[12] showed that the operation, as performed by these investigators does not necessarily cut off the circulation from all the glomeruli Beddard[13] proved that this can be accomplished with proper care, but in his first series of experiments the successful operation led to cessation of the urine flow

His second series with Bainbridge[14] showed that the functions of the tubules can be maintained by keeping the animals in an atmosphere of oxygen Observations on these animals (in which the glomeruli are excluded) demonstrate that the tubules are capable under the stimulus of urea injection of secreting water chlorid, sulphate, urea, and sugar in hyperglycemia, that they form sugar when poisoned by phlorrhizin, and that the urine is of acid reaction In short, they prove that the tubular epithelium is capable of secreting each of the urinary constituents in frogs, and there is no good reason to assume that the mammalian epithelium behaves differently, although this is not directly proved One of the important points in the urine controversy may therefore be considered as definitely settled However the experiments leave unsolved the equally important question of tubular reabsorption, of the glomerular functions and of the relative importance of these processes

These matters are taken up in the experiments of Cullis[15], who, instead of ligating the vessels, excised the heart and separately perfused the vessels of either the glomeruli (through the aorta), or of the tubules (through the abdominal vein), or of both The perfusions were made with a diluted oxygenated Locke's fluid isotonic with 0 6 per cent NaCl

The results show that, in the artificially perfused frog's kidney, the glomeruli ordinarily secrete all the water and probably all the dissolved substance They are the mechanism on which the saline diuretics act, exclusively in the case of sulphates chlorids, nitrates and acid phosphates, and mainly in the case of dextrose and urea The tubular epithelium does not ordinarily eliminate water and it is doubtful whether it eliminates salts, it is not stimulated by saline diuretics, except to a limited extent by dextrose and urea, but it is activated by caffein and phlorrhizin (whether these also act on the glomeruli is not decided) When thus stimulated, the tubules eliminate water, chlorids, sulphates and dextrose Phlorrhizin also causes the production of dextrose

Could such conclusions be drawn from experiments on living, mammalian kidneys, working under normal conditions, their importance could not be exaggerated, for they would show that the elimination of all the urine constituents could be carried on vicariously by either the glomeruli or the tubules, but that ordinarily the glomeruli played the preponderant role

Unfortunately, however, several objections can be made to these experiments In the first place, the results obtained on the frog need not apply to mammals, and more seriously, from what we know of the extreme dependence of the kidneys on an arterial blood supply, it would seem that kidneys artificially perfused with a saline mixture are not proper objects for investigating the vital function of the kidney The response to caffein and phlorrhizin is presumably vital but it is known that different functions of the kidney disappear at different times after death

In the mammalian kidney, for instance, the ability to secrete what may properly be called a urine is gone almost immediately after the death of the animal, the reaction of suprarenal injections lasts for some hours, the consumption of oxygen and the dilator reaction to blood or hydrocyanic acid disappears only after some days[16]

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[11] Nussbaum Pflüger's Archiv 1878 xvi, p 139, and xvii, p 580

[12] Adami Jour of Physiol vi p 382

[13] Beddard Jour of Physiol 1902 xxviii p 20

[14] Bainbridge and Beddard Biochemical Jour 1906 i p 255

[15] Jour of Physiol 1906 xxxiv p 250

[16] Sollmann (T) Amer Jour of Physiol, 1905 xiii, p 243

It is quite conceivable that a greater or lesser part of the phenomena studied by Cullis are phenomena of postmortem filtration, and as long as this doubt exists, the conclusions are insecure Even were they granted, however, they would throw light only on the relative functions of the tubules and glomeruli, and very little on the mechanisms through which these functions are carried out Whether entirely by secretion or partly by filtration and reabsorption

MECHANICAL OBJECTION TO THE FILTRATION THEORY

Until recently it has been universally believed that the structure of the glomeruli is that of an ideal filter, and consequently that filtration is bound to occur there unless it be opposed by special forces, such as osmosis, *etc* Hill[17] and Filehne and Biberfeld,[18] however, now contend that glomeruli filtration, in the living or dead kidney, is *a priori* impossible This contention is mainly theoretical and is based largely on the assumption that, the cellular protoplasm being practically a colloidal solution, it must transmit pressure equally in all directions The fluid in the capsule of Bowman would, therefore, be under the same pressure as that in the glomerular capillaries, so that there would be no filtration pressure Furthermore, Filehne and Biberfeld claim that, even if a pressure existed, filtration would not occur, at least they could not with ordinary pressure obtain filtration through egg-membrane or gelatin membranes, to which the capillary membrane might be compared Finally, they failed to observe any filtration of carmin in dead kidneys

To all these arguments of Hill and Filehne and Biberfeld, there is opposed the simple fact that filtration does occur very freely, in excised kidneys, as will be shown *in the next section* It is therefore only necessary to seek for the cause of the fallacies in the above argument The first assumption, that there can be no filtration pressure, probably errs in underestimating the importance of the relative rigidity of the vascular wall, of the basement membrane, and of other connective tissue structures, and possibly of the cell-walls—all of which interpose obstacles to the free transmission of pressures across them The negative results with homogeneous membranes and carmin injections simply show that the conditions of glomerular filtration were not really reproduced It is not difficult to advance several possible explanations for this failure, but it would be unprofitable to discuss these until they have been subjected to experiment

FILTRATION PHENOMENA IN EXCISED KIDNEYS

When a process involves many complex factors in part of unknown nature—and this is the case with urine-formation—it may be of advantage to confine the investigation to the simplest factors With this idea, I have carried out an extensive series of investigations (with the collaboration of Hatcher[19]) on the *perfusion* of excised kidneys By using these several days after death or by killing them, for instance, with strong salt solution the "vital" factors could be completely eliminated, leaving only the purely mechanical phenomena The injection of saline solutions into the renal artery produces an outflow of fluid *from the vein*, and in fresh kidneys also from the ureter This ureter flow is not *due* to rupture of the vessels for it does not contain corpuscles when blood is added to the perfusing fluid Nor does it involve any vital force, for it is even much more copious when solutions of such strengths are used as would seriously impede any vital action There are other, equally potent, reasons which prove that this ureter fluid is formed purely by filtration

The results of these experiments show that *filtration* does not account at all for the composition of the urine, since the composition of the ureter-fluids corresponded quantitatively (as far as investigated) with that of the perfusing fluids The effects on the circulation through the kidney, and on the quantity of urine, *on the other* hand, correspond very closely with those produced by analagous changes in the living animal

While these experiments show that many phenomena in the formation of urine agree perfectly with the simple mechanical conception of filtration, it must be remembered that one of the most important factors—the composition of the urine—is entirely unexplained by them Even where the correspondence is complete this does not exclude the cooperation of a vital factor Strictly speaking, the results prove only that a series of phenomena occur in the kidney as if this were a simple filter and that any vital actions which may participate in these phenomena, either act in the same direction as filtration, or else are of subordinate importance 'On the other hand, however, it must be remembered that a vitalistic *interpretation is not justified until* the *mechanical* interpretation has been shown to be inadequate

THE OSMOTIC WORK PERFORMED BY THE KIDNEY

It has been stated above that *filtration* can not account for the composition of the urine, moreover, a consideration of the composition of the urine teaches that there are forces at work in the kidney opposed to filtration and many times greater than the available *filtration pressure In the transformation of plasma* into urine, the molecular concentration is generally altered This corresponds to a change in the osmotic pressure, and this implies work The forces required for this are very commonly a hundred or more times greater than the blood pressure available for filtration This makes it necessary' to assume that the changes in concentration take place after the urine has been filtered, i e, in the tubules and not in the glomeruli

This is important, for as we now understand the laws of osmosis, it follows that the glomerular fluid, if it is a filtrate, must have very nearly the same total molecular concentration as the blood-plasma As soon as we *grant that* the glomerular fluid is more dilute or more concentrated than the plasma we renounce the filtration theory, at least for these conditions There is no conclusive *evidence*, positive or negative, however, as to the *concentration* of the glomerular fluid

The work of L Kahlenberg,[23] which has come to my notice since writing the above, indicates that the theory on which these calculations of osmotic pressure are based, is erroneous If he is correct—and his experiments and deductions are very convincing—all the arguments based on osmotic concentration of the urine must be reconsidered and revised, and meanwhile can not be utilized either for or against the filtration theory

THE OXYGEN CONSUMPTION OF THE KIDNEY

A most interesting confirmation of the large amount of work performed by the kidney, is furnished by the work of Barcroft and Brodie,[24] who investigated the oxygen consumption of this organ In proportion to the weight, this is about as large as the average for the other organs of the body, when the urine is scanty, but in urea, sulphate or phlorrhizin diuresis it rises to a mean of five times the average of the body

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[17] Hill Biochem Jour 1906 i p 55

[18] Filehne and Biberfeld Pflüger's Archiv, 1906 cxi p 1.

[23] Kahlenberg (L) Jour of Physical Chemistry 1906 x 141

[24] Barcroft and Brodie Jour of Physiol, 1904, xxxii, p 18 1905 xxxiii p 52

ATTEMPTS TO ISOLATE THE FUNCTIONS OF THE GLOMERULI AND TUBULES IN MAMMALS

The striking differences in the anatomic structure of these two portions of the kidney would suffice to justify the conclusion that they work through different mechanisms, even were there no other proofs of this fact It is, therefore, essential to an explanation of urine-formation, that the physiologic differences connected with these structural differences be known In the frog, as we have seen, the separate blood-supply of these two sets of structures offers the possibility of isolating their functions directly In mammals, however, the same blood passes successively through both, so that the question can not be approached in this simple manner

Two methods of investigation have been principally followed The one consists in the attempt to destroy one set of structures, whilst the other is left intact The second, in altering conditions which are assumed to affect the functions of the one and not of the other Both of these methods admit of almost infinite variations, and have been extensively practiced They have led to the discovery of a great many empirical results and of some empirical laws, but to the problem of the special function of the glomeruli and troubles, they have contributed very little that may be considered as definitely settled or conclusive The reasons for this failure are not far to seek, as we shall see

METHODS INVOLVING INJURY TO ONE OF THE STRUCTURES

No method has yet been devised, by which one set of structures can be wholly destroyed, while the other is left wholly intact, and a merely partial destruction of the one set, or a greater destruction of the one than of the other, does not lead to clear results—partly because of the compensatory action of the remaining portions, and partly because the kidney reacts to certain injuries in a specific and very violent manner

This is illustrated by the polyuria following the partial excision of the kidneys in the experiments of Bradford[25] Complex pathologic processes are thereby substituted, to an incalculable degree, for the simple physiologic modification at which it is aimed Since we know nothing about the nature of these processes and very little about the conditions under which they occur, they necessitate a most careful criticism of every destruction-method

EXPERIMENTAL NEPHRITIS

This can readily be produced by the use of certain drugs,[31] and may be confined at will to either the glomeruli or the tubules, at least in so far as the histologic appearance shows The nephritis leads to certain changes in the urine, and the animals thus treated may be subjected to a variety of procedures, and the results compared with those obtained on normal animals A very attractive field for research is thus thrown open It must be remembered, however, that nephritis presumably *alters* the functions of cells more commonly than it *destroys* them This introduces unknown factors, which render conclusions as to the *normal* functions insecure, or at best conditional on certain assumptions Nevertheless, many researches have been made along this line, and they have yielded results of at least empirical value But, for the reasons stated, they do not throw any clear light on the kidney mechanism

EVIDENCES DRAWN FROM THE EFFECTS OF VARIOUS CONDITIONS ON THE URINE

It will be remembered that the second method of separating the functions of the glomeruli and tubules, consists in subjecting the kidney to conditions which are assumed to affect exclusively, or at least more specifically, one of these structures The objection to the principles of this general method consists in the necessity for making assumptions, which are often not binding and which are sometimes the very point to be proved

THE INFLUENCE OF THE CIRCULATION ON THE URINE

As we have seen, the flow of urine is influenced by changes in circulation, exactly as if it were formed of pure filtration, a fact which has always been the main-anchor of hope for the adherents of the filtration theory, and which has been abundantly supported by my perfusion experiments It has been objected by those who prefer the secretion theory, that the activity of other glands is also generally accompanied by increased circulation Macallum,[33] however, has pointed out that this is not an indispensable factor in strictly secretory action, indeed, outside of the kidney the increased circulation generally can be shown to be the effect rather than the cause of the secretion At all events, the dependence is nowhere as intimate as it can be shown to be in this organ, when the experiments are properly conducted

The above, of course, refers only to the quantity of the urine, and not to its composition As to this, we have seen that it can not be explained on a mechanical basis It may be presumed that it is influenced at least indirectly, by the circulation, but definite data are scanty

THE EFFECTS ON INCREASED URETER PRESSURE

The rate of excretion of different salts under different degrees of diuresis inclined Cushny[37] to the opinion that the formation of urine is essentially a filtration and reabsorption process According to him, the glomerular fluid is a filtrate of the same composition as the plasma (minus the proteid), this fluid, in passing down the tubules, undergoes partial reabsorption The differences in the individual constituents are referred to differences in their absorbability

Water and chlorids are absorbed relatively readily, sulphates, urea and phosphates much less readily When the secretion of the urine is slow, there is more opportunity for reabsorption, and consequently all the constituents of the urine would be lessened in amount, but this diminution would affect principally the more absorable constituents, the water and chlorids, while the sulphates, phosphates and urea would scarcely be altered Rapid diuresis would have the opposite effects

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[25] Bradford (Rose) Jour of Physiol., 1898 xxiii p 415

[31] A summary of the work on experimental nephritis is given by Sollmann, in The Journal A M A Nov 26 1904

[33] Macallum (J B) Jour of Biol Chem 1906 i, p 335

[37] Cushny Jour of Physiol, 1902, xxvii, p 429

In brief, Cushny's results were in substantial agreement with his assumptions, although they did not prove these assumptions, since other explanations could not be excluded Brodie and Cullis,[38] however, obtained the very opposite results in some very similar experiments They found that moderate resistance in the ureter caused an increase of urine and sulphates, instead of the diminution demanded by Cushny's theory, which they, therefore, consider disproved This again seems to be an extreme assumption It does not appear absolutely certain from their paper that they really eliminated ureter-peristalsis (see above), so that they may in fact have dealt with a lessened resistance in the ureter, instead of an increased resistance, as they supposed in drawing their conclusions But granting that their interpretation is correct, the very differences in the results prove that they were working under conditions somehow essentially different from those of Cushny. In other words, while the filtration and reabsorption theory could not explain the results obtained under their conditions, it might still explain Cushny's results, obtained under his conditions This would only necessitate the assumption that the kidney disposes over a number of mechanisms—an assumption which is not inherently improbable

THE REGULATION OF THE URINE

Everybody is agreed that the main purpose of the kidneys consists in the removal of such material as would otherwise accumulate in excessive amount in the body—in other words, the kidneys exist for the purpose of maintaining the composition of the body approximately constant It is evident that they perform this regulating function adequately under all ordinary conditions, by a suitable adaptation of the quantity and composition of the urine, but the mechanism through which they respond to the ever-varying task which is imposed on them, is by no means clear and involves some very interesting problems

How does the body at large inform the kidneys of its needs? How do they modify their functions to comply with the demands? Since no secretory nerves can be demonstrated in the kidneys, the regulation is presumably chemical, and one would naturally refer it to the blood, which establishes a direct relation between the tissues and the kidneys In other words, one would assume that the composition of the urine is regulated directly by that of the blood This would be a simple explanation and it seems supported by the fact that the composition of the blood is much more constant than that of the tissues, so that the regulation of the blood appears to be the more important function

On the other hand, however, this constancy introduces a complication for it means that very large changes in the urine correspond to very small changes in the blood, indeed the composition of the blood, by our methods of analysis, appears to be constant, when that of the urine and that of the tissues is profoundly altered There is also abundant evidence (Magnus[39], Sollmann[40]) that the regulation of the blood is accomplished much more effectively by the tissues than by the urine These facts suggest that it is the tissues, rather than the blood, which really influence the urine These considerations give us a choice between several *a priori* assumptions

FORSTER'S THEORY OF CHLORID RETENTION

As is well known, the withholding of salt causes a diminution in the chlorid percentage of the urine, to a very small amount, while at the same time the percentage in the serum is practically unchanged The urinary chlorids can be reduced by a number of other measures, and I have shown[41] that these are all such as would theoretically tend to lower the percentage of chlorids in the blood—but actual analysis fails to show this diminution

As long ago as 1873 Forster[42] advanced a physicochemical theory for this phenomenon, in salt-hunger He suggested that chlorids exist in the blood in two forms firstly, free, as they are in watery solutions, and secondly, combined in some way with the colloids of the plasma Assuming the free chlorids to be filtrable, and the combined chlorids as non-filtrable, the chlorid retention would be easily explained, as follows In salt-hunger, for instance, the free chlorids would soon be eliminated, and the excretion would therefore stop, analysis would show an abundance of chlorids in the serum, but these would be in the non-filtrable combined form All the other measures which lower the chlorid content of the urine would similarly reduce the percentage of free chlorids in the blood, while they would leave the combined chlorids unaffected I have found[41] that certain salts, such as nitrates, iodids, or sulphocyanids, can raise the chlorid percentage in these conditions All these salts are very similar to chlorids, and it seems quite natural that they could displace a part of the combined chlorid from its combinations and thus convert it into the filtrable form The fact that urine is free from sugar, but that this substance appears at once in hyperglycemia, could similarly be explained on the assumption that the ordinary quantity of blood-sugar is bound and non-filtrable, but that any additional quantity is free, and therefore filtrable

The agreement of these modern facts with Forster's theory is practically perfect, but the agreement is only empirical, and does not prove the theory In the first place, the glomerular urine would need to be hypoisotonic (and there is some direct evidence that it may be so), but as we have seen, a hypoisotonic urine can not be formed by filtration alone, as Forster supposed The theory would need to be modified in the sense that free chlorids or sugar stimulate the renal cells to their secretion, whilst bound ions do not have this action—which converts the theory from a physical one into an essentially vital one Furthermore, it has been found impossible to demonstrate the existence of such compounds by any physical or chemical means—the latest attempt by Rosenfeld[43] having again proved negative This is pretty strong evidence against the entire theory, at least it would be necessary to assume that the compounds are of a kind at present unknown to physics and chemistry Nevertheless, the empirical agreement between facts and theory is so striking, that the search for new methods of demonstrating the existence or non-existence of such compounds does not appear to me as useless

LOEWI'S THEORY

Another theory which involves the conception of colloid-compounds is advanced by Loewi[44] According to this theory, as in Forster s, the free substances are eliminated by glomerular filtration, with partial reabsorption, somewhat after Cushny's theory Unlike Forster, Loewi assumes that the compounds are also eliminated, but by tubular secretion Another difference between the two theories is that Loewi believes that each substance occurs as a rule in only one form—either all of it is free or all is combined—whereas Forster believed that the same substance always existed in both forms

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[38] Brodie and Cullis Jour of Physiol 1906 xxxiv p 224

[39] Magnus Arch f exp Path u Pharm 1900 xliv, p 68.

[40] Arch f exp Path u Pharm 1901 xlvi p 1

[41] (a) Arch f exp Path u Pharm 1902 xlviii p 410 (b)

[42] Forster Ztschr f. Biol 1873 ix p 207

[43] Rosenfeld Biochem Ztschr 1906 iii p 335

[44] (a) Arch f exp Path u Pharm 1902 xlviii p 410 (b) ibid 1903 l, p 326 (c) ibid. 1905, liii p 15, (d) p 33, (e) ibid. p 40

Loewi's theory is based on the assumption that the common diuretics act by increasing glomerular pressure, and hence filtration Such constituents as are eliminated by filtration would therefore be increased by diuresis, whereas those which are "secreted' would not be increased These being once determined and accepted, one can, by reversing the argument, ascertain which diuretics act on filtration and which on secretion

Loewi's own results agree with these explanations, but in the work of other experimenters (Asher, Weber) results are found which would lead to different conclusions, when interpreted by the same logic However, the logic itself is open to criticism, for the conclusions are based on assumptions which are still in dispute, and which must be proved before the demonstration of the theory need be considered

ASHER'S THEORY

Asher does not deny that changes in the composition of the blood, when they exist, influence the urine, but he believes that the influence is not to be explained by filtration, but by modifications in the functional state of the kidney cells In those common cases in which the alteration in the blood are inconspicuous or hypothetical, he believes that the supposed functional changes in the kidney are brought about (without the intermediation of the blood) in some unexplained way, directly by the tissues To prove this theory, he and his pupils have made a series of experiments in which they have attempted to alter the functional state of either the kidney cells directly, or of other organs[46], what Asher calls the direct and indirect activity method

The results as a whole show that some conditions of the body do not influence the urine, while others alter it profoundly This doubtless agrees with Asher's theory that the urine is influenced by the state of the kidney cells rather than by the composition of the blood Indeed, it may be granted that the results are more easily explained by this theory than by any other However, too many unknown factors are involved to consider the proof as at all positive

The experiments of Waldstein[46g] are more convincing He investigated the rate of urine formation under the influence of the transfusion of blood from another animal, and found that the introduction of additional blood caused a good diuresis in well nourished animals, but had little effect in fasting animals It was practically immaterial whether the transfused blood came from a well nourished or from a fasting animal It would appear, therefore that the composition of the blood is of much less importance than the susceptibility of the kidney, as determined by the preceding nutrition of the animal

THE ACTION OF DIURETICS

This has been touched on incidentally in the preceding We have seen that Cullis localized the action of salts in frogs, mainly in the glomeruli, that of caffein and phlorrhizin in the tubules, urea in both Loewi, in mammals, by the use of different methods also locates the action of salts in the glomeruli and phlorrhizin in the tubules, but caffein and urea act, according to him, exclusively in the glomeruli In connection with caffein, he discovered the interesting fact that it may dilate the renal vessels without changing the volume of the organ According to my work, the diuretic action of salts corresponds to their action on filtration, hence they would act on the glomeruli

It will be seen that there is practical unanimity among these investigators in the opinion that salts act mainly on the glomeruli, and phlorrhizin on the tubules As to their mode of action—whether they cause a vital stimulation, or a merely mechanical modification of filtration through circulatory changes—there is the usual diversity of opinion The statements in regard to the diuretic action of water are less positive, although it is generally held that it acts in much the same manner as the salts There is complete disagreement as to the site of the action of urea, and especially of caffein It must be remarked, however, that none of the evidence which has been brought forward in the attempt to localize the action of diuretics comes up to the rigorous standard which I have set

The study of diabetes insipidus and of polydipsia, has also failed to throw much light on the subject, although it has led to interesting empirical results E Meyer[49], for instance, has shown that the two conditions agree in an excessive output of a very dilute urine, but they differ in that the concentration of the urine can be raised at will in polydipsia by administering salt, whereas in diabetes insipidus, the salt does not increase the concentration, but merely causes greater thirst and therefore a greater diuresis In other words, the kidney cells are incapable of secreting a concentrated urine—pointing to the importance of the functional state of the epithelium in the sense of Asher Another rather interesting fact is that the ordinary diuretics do not increase the polyuria in either diabetes insipidus (Meyer) or in polydipsia (Sollmann and Hofmann[50]) It is also worthy of notice, as remarked by the last named investigators, that an intense and prolonged polyuria does not cause any demonstrable injury to the kidneys

This, however, brings us to those problems which are of clinical interest, with little bearing on the theoretical questions of the mechanism of urine formation I shall therefore conclude this review by summing up what is, in my opinion, the present status of the subject

CONCLUSIONS

The investigations which we have considered seem to me to justify the following conclusions

1 *Excretion Through the Glomeruli and Tubules*—The modifications of Nussbaum s experiment prove that in frogs' kidneys all the normal urinary constituents can be excreted vicariously by either the glomeruli or tubules, but the elimination of water and probably of most of the other ordinary constituents occurs normally only by the glomeruli, and only under unusual conditions by the tubules Certain pigments, on the other

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[46] (a) Asher (L) and Cutter Ztschr f Biol 1900 xl p 535 (b) Asher ibid 1903, xlv p 121 (c) Tropp ibid 1903 xlv p 143 (d) Asher ibid 1904 xlvi p 61 (e) Michaud ibid 1904 xlvi p 198 (f) Asher and Bruck ibid 1904 xlvii p 1 (g) Waldstein Biochem Ztschr, 1906, ii, p 1, (h) Rosenfeld ibid, iii, p 35

[49] Meyer (E) *Deut Arch f klin Med* 1905 lxxxii

[50] Sollmann and Hofmann Amer Jour of Med Science, February, 1905

hand, are excreted exclusively by the tubular epithelium. Attempts to separate the functions of the glomeruli and tubules in mammals have not thus far led to decisive results. It is probable, but not proved, that the same conditions prevail as in frogs. There is no conclusive evidence that urea is secreted differently from the salts.

2. *Secretion or Reabsorption by the Tubular Epithelium.*—As stated, the tubular epithelium can secrete all the urinary constituents in the frog. It is highly probable that it secretes pigments in mammals. It is proven that it secretes sugar under the influence of phlorrhizin. There can be no doubt, therefore, that it is capable of secreting some substances, but there is no definite evidence as to whether any of the normal constituents are normally secreted by this epithelium. Reabsorption under normal conditions is neither proved nor disproved, however, its acceptance furnishes the clearest explanation of many phenomena. If it exists it must be selective, discriminating between the different constituents and varying with conditions.

3. *Filtration in the Kidney.*—Filtration through the glomeruli is physically possible, because it occurs in dead kidneys. The influence of saline diuretics, of changes of circulation, etc., on the urine flow corresponds closely in the living and dead kidneys. This indicates that filtration is probably an important factor in the formation of urine, but there is no direct proof. The composition of the urine can not be explained by filtration.

4. *"Secretion" by the Glomeruli.*—It is very probable, though not proved, that glomerular urine may, at times, have a much lower concentration than the plasma. The formation of such a fluid would probably require a force exceeding the available filtration pressure—in other words, it would constitute a secretory process.

5. *The Concentration of the Urine.*—It is very probable, though not proved, that the urine ordinarily becomes more concentrated as it passes through the tubules. At all events, the formation of a urine of greater concentration than the plasma requires an unknown force—whether secretory or absorbing—which must be classed as vital.

6. *The Regulation of the Urine.*—There is no satisfactory explanation of the adaptation of the urine to the needs of the body, none of the proposed theories resting on conclusive proof.

7. *The Action of Diuretics.*—There is no binding evidence as to the mechanism of any of the diuretics, but it is highly probable that salts act physically and mainly on the glomeruli, and that phlorrhizin acts on the tubules. The diuretic actions of water, urea and caffein are even more obscure.

THE IMPORTANCE OF ICE IN THE PRODUCTION OF TYPHOID FEVER*

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NEW YORK CITY

We may endeavor to settle this question directly by determining whether epidemics or scattered cases of typhoid fever have been traced to ice, or, failing in this, we may try to estimate the probability of such infection by learning the duration of life of the typhoid bacillus after freezing.

The total number of instances of typhoid fever which have been directly traced to ice infection are remarkably few. I have been unable to trace more than two or three. One was in France, where a group of officers placed ice made from water polluted by a sewer in their wine and afterward developed typhoid fever, while those of the same company not using ice escaped. A second case was in a small epidemic brought to my notice which occurred in those who used ice from a pond. It was found that water directly infected with typhoid feces had flowed over its frozen surface and been congealed there. If typhoid fever is communicated through ice, except under exceptional conditions, it is remarkable that so few cases are traced to it.

The fact that freezing kills a large percentage of typhoid bacilli makes it indeed possible to conceive that ice from moderately infected water contains so few living typhoid bacilli that only the exceptional person here and there becomes infected, and so the source of the infection remains undetected.

If this be true and scattered cases occur, there should be at least some increase on some or every year in March, April and May in such a city as New York, where four-fifths of all the ice consumed is from the Hudson River, which is known to be contaminated with typhoid bacilli. The people of New York use ice very freely and most of them put it directly in their water or place their vegetables on it. The new ice from the Hudson River is gathered in January or February and stored on top of the left-over ice, and thus shipments to the city are immediately begun. It is an established fact that typhoid bacilli in ice are most abundant during the days immediately after freezing. At the end of two months less than 1 per cent of the original number survive.

If Hudson River ice produced an appreciable amount of typhoid fever, this would then be noticeable in March and in April and perhaps in May.

When we examine the records for the past ten years we find no increase of typhoid fever in Greater New York during those months, with the one exception of the present year, when we had in the Borough of Manhattan a sharp outbreak lasting four weeks. This outbreak did not occur at all in Brooklyn. As the people of Brooklyn drank different water, but received ice from the same places of the Hudson River as those of Manhattan, this directed attention to the water or milk rather than the ice. Examination of the Croton watershed at the time showed that a small epidemic of typhoid existed there and that pollution of the water was probable. This suggested still more strongly that the water and not the ice was the cause of the typhoid infection.

It happened that most of the cases occurred in those living in the section of the upper West Side, where only well-to-do people live. An investigation showed that the majority of the infected had used only artificial ice and several had used no ice in their water at all.

Let us now turn our attention to the life of the typhoid bacillus in ice in laboratory experiments. The first important investigation was that of Prudden, who showed that typhoid bacilli might live for three months or longer in ice. This experiment is frequently wrongly interpreted, as when a recent writer states: "It has been amply demonstrated that the germs of typhoid fever are not killed by freezing and that they have been known to live in ice for long periods of time."

It is true that in Dr. Prudden's experiment a few typhoid bacilli remained alive for three months, when the experiment was terminated, but these were but a small fraction of 1 per cent of the original number

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City, June 1907.

Following Prudden's experiment Sedgwick and Winslow in Boston and I in New York City carried on independently by a series of experiments These led to the same conclusions A table summarizing a final experiment of mine in which twenty-one different strains, mostly of recent isolation, were subjected to the test is given below

In these experiments twenty-one different flasks of Croton water were inoculated each with a different strain of typhoid bacilli In one a little of the feces rich in typhoid was directly added The infected water in each flask was then pipetted into thirty tubes These tubes were placed in a cold storage room in which the temperature varied from 20 to 28° F At first tubes were removed and tested twice a week, later once a week The object of using so many different strains was because it has become evident that some cultures lived longer than others

LIFE OF TWENTY ONE STRAINS OF TYPHOID BACILLI IN ICE

	Average number of bacilli in ice	Percentage typhoid bacilli living
Before freezing	2 560,410	100
Frozen three days	1,089,470	42
Frozen seven days	361 136	14
Frozen fourteen days	203,300	8
Frozen twenty-one days	10 280	0 4
Frozen twenty eight days	4,540	0 17
Frozen five weeks	2 950	0 1
Frozen seven weeks	2,302	0 09
Frozen nine weeks	127	0 005
Frozen sixteen weeks	107	0 004
Frozen twenty two weeks	0	0

At the end of five weeks the water infected with six cultures was sterile, at the end of sixteen weeks only four strains remained alive

Two interesting investigations of Hudson River ice have just been completed One by Dr D D Jackson for the city and the other by Dr C E North for a private laboratory

There was noticed a considerable difference between the number of bacteria in the top, middle and bottom layers of ice This is natural, since while water in freezing from above downward markedly purifies itself, 75 per cent of the solids and a fair proportion of bacteria being eliminated, yet this can not happen in the case of the snow blanket which becomes flooded by rain or by cutting holes through the ice Here all impurities, such as dust and leaves which have fallen on the surface and dirt which may come from the water, remain with the bacteria which they carry The bottom ice, being the most recently frozen, has had least destruction by freezing Dr Jackson's report gives us a rather unpleasant impression of Hudson River ice He states that most of the samples either at the top or bottom show intestinal germs The worst portions of the ice showed from 1 to 10 bacilli of the colon group per c c These were taken above or less than five miles below Albany Some of this ice might aptly be termed solidified sewage

The analysis of the twenty-five samples shows, as one would expect, that the surface of the ice just at Albany was badly contaminated one c c of melted ice averaging about 15 000 bacteria for four samples Only one of the twenty-one samples taken at different distances below Albany showed over 1,000 per c c A sample from top of a cake of ice obtained two miles below Albany showed only 14 The other twenty samples had on the average 105 per c c

Dr North, in his investigation examined the ice from forty spots between Hudson and Albany He took samples from the top middle and bottom of each cake and the water of the river He has kindly permitted me to use some of his figures

The river water in the forty specimens averaged 1,800 bacteria per c c, the top ice 306, the bottom ice 36 and the middle ice 14 Only four specimens of top ice had over 500 bacteria per c c, none of the specimens of middle or bottom ice

Thirty-three of the specimens of water had over 500 and 23 over 1,000 Colon bacilli were obtained from but one specimen of the middle ice, two from the bottom ice and twelve from the top ice

The great destruction by freezing is noticeable in these figures Even the top ice soiled by the horses and men gathering it contained but 16 per cent as many bacteria as the water from which it was contained The bottom ice, the last to be frozen had but 2 per cent of those in the water

CONCLUSIONS

The danger from the use of ice produced from polluted water is always much less than the use of the water itself Every week that the ice is stored the danger becomes less, so that at four weeks it has become as much purified from typhoid bacilli as if subjected to sand filtration At the end of four months the danger becomes almost negligible, and at the end of six months quite so The slight danger from freshly cut ice, as well as the natural desire not to put even sterilized frozen sewage in our water, suggests agreement with the report of Dr Jackson, that portions of rivers greatly contaminated, such as the Hudson within three miles of Albany, should be condemned for harvesting ice for domestic purposes—such ice alone to be used where there is absolutely no contact with food

ROENTGEN RAY TECHNIC IN DERMATOLOGY [*]

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The value of Roentgen rays in the domain of dermatology has been thoroughly tested and cordially approved Its place in medicine, as a therapeutic agent, is now established on a sound and rational basis I have, therefore, attempted to prepare a brief paper on "Roentgen Ray Technic in Dermatology," because the technic, or, if you wish, the art, the skill of application, is the one great prime essential demanded of every operator, if he would attain the very best possible results So diametrically opposed are the announcements made relative to the value, the uses and the results attained by the Roentgen rays in *cutaneous affections*, that an explanation for these varying opinions must be sought in the differences in technic employed by the great army of *x*-ray therapists the world over

Needless to say, the Roentgenologist must be an adept at his work The hand of the tyro holds no comparison with the experienced operator in this field of endeavor In Roentgen diagnosis differences in technic result in excellent or defective skiagrams What is true here *holds equally well in the therapeutic application* of the rays In order to employ this agent so that satisfactory results may be obtained, it is primarily essential that its use as a diagnostic means should be perfectly mastered and that the operator have more than an ordinary knowledge of the principles involved and likewise an easy familiarity with the manipulation of the apparatus

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[*] Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City June, 1907

Like all new and growing sciences, this subject is beset with embarrassing inconsistencies In a certain skin disease one learned authority declares that the employment of a soft tube is imperative, while another decries the soft tube and asserts that a hard tube alone in that special case is effective and permissible Some specialists condemn the repeated and gradually ascending serial irradiations, urging the massive dose treatment as the most logical and curative Others give anywhere from one to six séances weekly, believing that massive doses are ineffective and dangerous There are many excellent students of the science who are assured that the production of an erythema of varying degree is essential to a cure Scores of other *x*-ray workers denounce any such procedure as wrong in conception and at variance with the dictates of good judgment Coupled with such flagrant contradictions are all sorts and manner of opinions as to the distance of the tube, these vary from 1 to 3 inches from the part, all the way up to 25 to 40 inches, and even more, it is therefore, necessary to determine some arbitrary rules that will give the most effective quality and quantity of the rays applicable in diseases of the skin

Incidentally I may remark that, while variations in the technic for each and every special case is imperatively demanded, the one great *desideratum* is the determination of the *quality* of the rays best adapted for the particular case under treatment The distance of the tube, the duration of treatment, etc, have a minor value and are of secondary importance in technic The most important factor is the selection of the rays most suitable and best adapted for the cases under consideration The complex nature of the Roentgen rays offers no alternative to the operator in our present state of knowledge, he must always employ the same compound rays, but the preponderant quality of rays in any bundle can be approximately determined and regulated Resolution into their component parts has thus far baffled the skill of the physicist and yet we can judge of the quality we are employing

From Roentgen therapist's standpoint, dermic lesions may be classified as follows

1 Where slight stimulation is required (acne)
2 Where epilation is necessary (hypertrichosis)
3 Where absorption of pathologic tissue is desired (eczema, psoriasis, lupus)
4 Malignant types of disease (epithelioma)

The technic will, of course, vary with the special character of the lesion to be irradiated This may be accomplished by varying both the quality and the quantity of rays, which takes into the consideration the vacuum of the tube and its distance from the part to be treated, duration and frequency of the exposures, etc The apparatus required for effective treatment is practically identical with that employed for skiagraphic work For therapeusis, a coil of 7 or 8 inch (18 or 20 cm) spark length will suffice, but it must be used properly and be of good quality

In superficial cases, the irradiations should be mild in character thus producing but slight stimulation In these cases it is our aim to bring about a constructive, not a destructive, condition of the affected area From a soft tube rays emanate capable of specially effecting tissue in the vicinity of the superficial papillary network, but liable to bring about atrophy and telangiectasis with the production of epilation They are most applicable in such affections as psoriasis, eczema, rodent ulcer, etc , the intensity of current, distance of tube, and frequency of application altering the effect

In deeper structures hard or medium hard tubes may be employed We may call into requisition the medium tubes when the deeper structures are to be treated, with but little effect on the superficial layers, as in hypertrichosis In using a hard tube, it is essential that the less easily penetrating rays be filtered, prior to the passage of the remaining rays to the deeper-seated structures It should not be forgotten that lengthy irradiations with soft tubes will not affect the deeper parts, because the great number of rays will suffer absorption by the cuticle

DISTANCE OF THE TUBE

The distance of the tube from the part depends on the quality of the tube, on the size of the area to be irradiated and whether a rapid reaction is desired or not By some it is asserted, in theory, that the distance of the tube from the part should be proportional to the height of the vacuum and inversely as the part to be affected is distant from the surface As a rule, hard tubes should have an anodal distance of from 12 to 15 inches (30 to 38 cm) from the area to be treated, with soft tubes 6 or 8 inches (15 or 20 cm) is effective The current should be generated by an induction coil

The interrupter most frequently employed in this connection is of the mechanical type, its two prominent advantages are the ease of its manipulation and its cleanliness The duration of irradiations is dependent on the source of the current (coil or static machine), on the patient's susceptibility and largely on the nature of the affection As was intimated previously, some authorities advocate brief, frequently repeated exposures, gradually increasing the dose, others approve of massive doses at longer intervals

FREQUENCY OF THE IRRADIATIONS

The frequency of irradiations will naturally depend on several factors character of the lesion, rapidity of action required, duration of each séance, and the distance of the tube from the lesion It would seem the part of wisdom to expose the patient twice or thrice weekly for the first two weeks, and then to discontinue treatment for a similar period of time, seeking in the interval for the occurrence of any untoward signs or symptoms Very close observation is imperatively demanded when treatment is administered every other day Some prefer this serial method, but the patient's susceptibility must never be lost sight of, if, however, vigilant care is exercised to see that the affected area is not overexposed, then the applications may be arranged more closely together for an almost indefinite period

I regret that progress in Roentgen ray technic in the past five years has not kept pace with the progress of time What was empirically true then is empirically true now Two great questions were propounded then What is the true nature of the rays? What is its physiologic action on the human tissues? To-day these queries remain unanswered The progress made and the advances wrought throughout this period are referable to the many and varied improvements in the apparatus

QUALITY AND QUANTITY OF RAYS

The methods employed for estimating the quality and quantity of the rays is a subject of paramount importance By quality I mean the property that these rays possess of penetrating the tissues, some pencils of these rays may penetrate quite easily , on the contrary, others may be less penetrating, becoming readily absorbed by the tissues

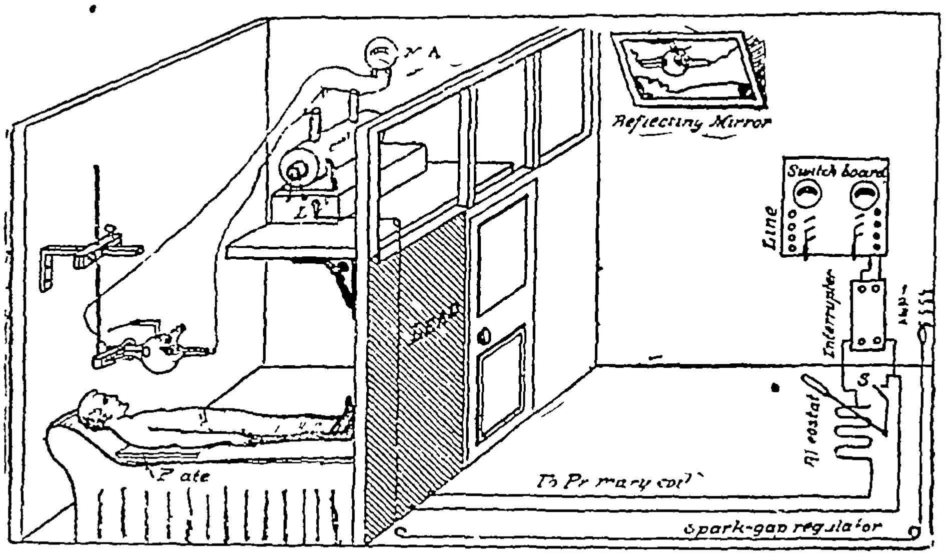
For estimating the quality of the rays, I employ the following methods Amount of current going to the primary coil, viz , volts and amperes, length of spark in parallel gap, milliamperage of the secondary induced current, radiochromometer of Benoist

By the quantity of the rays I mean their total action on the tissues, as is manifest by the duration and the effects of the irradiation I measure by the amount of current passing through the milliamperemeter and the length of irradiation and distance of tube from patient

SPECIAL TECHNIC

In a brief paper such as this, I will content myself merely by touching on the technic that I employ in some common dermic affections This must necessarily be only the average technic as it varies with the individual case

1 *Where Slight Stimulation Is Required* (*Acne*) —This form of disease requires the most mild action of the *x*-rays, the irradiation just strong enough to cause a slight stimulation The production of an erythema is not desirable, especially when the lesions are situated on the face Atrophic condition of the pitted areas may result where the follicles are advanced in the disease *Pigmentation rarely occurs and should never be permanent*



This treatment may need to be repeated several times, but the first course of treatment often causes the disappearance of the acne A medium vacuum tube equivalent to from 2 to 3 inches (5 to 7 5 cm) spark length, anode from 12 to 18 inches (37 2 to 45 cm) from the part 1 to 2 milliamperes in the secondary coil, about No 3 of the Benoist scale, three exposures a week for two weeks with a duration of from 2 to 3 minutes

2 *Where Epilation Is Necessary* (*Hypertrichosis, Favus, Ringworm*) —In the treatment of these conditions utmost care should be exercised in order to prevent ill results and to obtain the desired effect the parts often affected being the face and chin or upper lip The utmost care is necessary to ascertain the susceptibility and the dosage Blondes often show a greater susceptibility to the action of the rays than do brunets I have been in the habit of irradiating first other portions of the body, for example the arm in order to gauge my dosage, then after approximating the dose I irradiate the face, etc The treatment should be just enough to cause the gradual atrophy of the hair follicle without producing any erythema After first epilation let two or three weeks elapse and then irradiate mildly in order to render the epilation permanent, being careful, however, not to cause any pigmentation or telangiectasis or pitting of the face, protecting well the portions that it is not desired to erradiate Erythema of the skin is not necessary, but in spite of every precaution it often occurs, for such an accident cease the treatment and apply zinc oxid ointment

A medium soft tube at a distance of from 15 to 20 inches (27 to 50 cm) from the face, with a spark length (parallel) of from 1 to 4 inches (2 5 to 10 cm) always with mechanical interrupter, 1 to 2 milliamperes, B scale No 2 to 4, beginning with 2 minutes each exposure thrice weekly first two weeks and then increase up to 2 or 3 weeks Cease then and wait for several weeks, do not be hasty , let the action of the rays work gradually

3 *Where Absorption Is Required* (*Eczema, Psoriasis, Lupus, Etc*) —The treatment of this group of cases can be approximated in a single form of technic because there is so much variation that the conditions overlap each other in severity and the essential is the production of resolution and absorption It is impossible in a brief summary of technic to point out more than the result desired and a technic which can be varied to suit the individual case It suffices to say that the same technic as above, varied by more active rays, i e a lower vacuum, and a closer distance of tube with longer exposures, will produce a severe reaction, the intensity of the reaction being regulated by the disease under consideration and its clinical manifestations For very intense reaction which is seldom employed and only in very resistant cases by expert clinical observers, the following technic is permissible Tube showing the cathodic stream very faintly and only slight green fluorescence Parallel resistance ¼ to ½ inch (0 5 to 1 2 cm), the anodal distance varies the intensity of the effect, as also the milliamperes, as this tube is capable of carrying a very high amount of current even with a weak coil The distance can vary from 6 to 8 inches (15 to 20 cm), the intensity of effect corresponding The milliamperage likewise can range from 1 to 6 milliamperes The duration of each exposure also depends on the reaction desired These treatments can not be repeated until the effect of a previous treatment has been observed They are very severe and dangerous, treatments, unless employed by an expert clinical observer, should seldom be employed

The average treatment for these lesions is a soft tube without cathodic rays, having a parallel spark resistance of about 1½ inches (4 cm) to about B 2 The current should not be over 2 milliamperes This treatment can be given with care three times a week with a duration of 5 to 10 minutes The resistance of the tube or its penetration must be varied if resolution is delayed in deep seated foci This depends on the clinical result observed

4 *Malignant Types of Diseases* (*Epitheliomata*) —Certain factors must be considered in irradiating these

growths, viz the character of the lesion its rate of growth, location, glandular involvement, age of the patient, the state of health etc When the epithelioma has grown rapidly, I advise an immediate operation and subsequent *x*-ray treatment

The severity of an epitheliomatous growth is largely dependent on the proximity of the lymphatic chain of glands Thus, an ulcer of the lower lip is less favorable For cutaneous epitheliomas, place the anode of tube about 10 or 12 inches (25 or 30 cm) distant from the part with a soft medium vacuum, giving a spark length (parallel) of from 1 to 2 inches (2 5 to 5 cm), irradiate thrice weekly for three weeks, duration of each seance being about 6 or 8 minutes, 1 to 2 milliamperes passing through the tube Benoist s No 2 or 3 scale

Roentgen dermatitis may involve both the operator and the patient As to the patient, the development of a Roentgen dermatitis is very prone to occur in irradiating cutaneous affections It, therefore, becomes incumbent on the operator to watch most carefully for the appearance of the earliest symptoms, such as itching and erythema It seems proper to remark just here that many operators aim to bring about a slight erythema, urging that its production exerts a curative action on the affection being treated Other operators incline to the belief that a moderate tanning of the skin is a desideratum.

It is always my aim to prevent an occurrence of either of these effects Individual susceptibility the peculiar location of the lesion, faulty technic and inexperience of the operator, are all factors that increase the frequency of Roentgen dermatitis

To lessen the likelihood of this complication, many advise that the Crookes tube be covered with sheets of thin lead, or encased in a box lined with lead, or that it be painted with some opaque material A very clever device is to have the active hemisphere made of lead glass and provided with various sized diaphragms, as is well exemplified in the Piffard vacuum tube My own personal preference is the rubber shield and diaphragm, the patient being at the same time protected by sheets of lead that have been previously grounded

In order to diminish the quantity of the soft or less penetrating rays and to effect their absorption, the employment of filters is commended by some practitioners Maragliano eliminates the non-penetrating rays by the use of diachylon (as a rule, disposed in a thickness of four layers) which readily adheres tightly to the skin Pfahler and Schamberg advocate the use of wet leather, but the fact that moisture and leather absorb the rays to a too great extent and that consequently a limited quantity of rays is sent to the diseased area, my own preference reverts to the employment of a thin sheet of aluminum 1/32 of an inch (1 mm) in thickness (grounded), which eliminates most largely the soft rays and is a valuable accessory to the *x*-ray worker in his treatment of the deeper structures In treating some conditions this must be omitted

As I have said previously, it is the duty of the Roentgen therapist to watch most carefully for the oncome of cutaneous itching and the appearance of slight erythema, if the first stage of a dermatitis seems imminent, the operator should immediately cease with the irradiation I at once purge the patient, apply zinc oxid and employ cold compresses In cases of vesiculation, I incise and drain the serum When the dermatitis is of the second degree I approve of the use of a normal salt solution applied on a compress I do not favor the employment of carbolic acid solution, corrosive sublimate solution, etc One of the best dressings is simple sterile gauze

It is with sincere regret that I am compelled to say that there is no known curative agent to meet that very distressing condition, unfortunately too well known to my associates, namely, chronic Roentgen dermatitis It is my belief that meddlesome interference is undoubtedly the cause of much suffering, of loss of fingers and hands, and, indeed, of many precious lives There is entirely too much medication, and the application of injurious and irritating liniments and ointments

I am getting relief from the dermatitic condition of my hands by as little medication as I can conceive I immerse them in hot water for ten minutes daily and apply a slight quantity of cold cream or lanolin to prevent cracking of the skin, completing the details by encasing the fingers in sterile gauze

For the past five years I have avoided remaining in the same room with the patient, devising a reflecting mirror that is placed at an angle on the ceiling, which, of course, faithfully reveals the fluorescence of the tube and the position of the patient I occupy a place in the adjoining room, whose partitioned wall is lined with layers of lead, one-half an inch in thickness (see illustration)

In an experience of 8,000 exposures for diagnostic purposes, I accidentally produced epilation once and erythema once, my assistant produced dermatitis once, in a *fluoroscopic* examination of ten minutes' duration, while examining for gastroptosis

I always warn my patients of the possibility of some ill effect from the action of the rays When about to treat acne and hypertrichosis, I pronounce this admonition with even greater emphasis

38 East Forty ninth Street

TREATMENT OF ACNE AND CHRONIC ECZEMA *

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The successful treatment of acne and eczema means something more than a hasty prescription for a tonic and an external application Routine treatment without a careful study of the etiology, pathology, stage and type of the disease, shows lack of clinical knowledge The treatment of any skin lesion demands of the practitioner a sound knowledge of general medicine and experience of the various therapeutic agents employed

There are probably no two skin lesions in which a larger number of remedies have been employed Sabouraud states "There is not a single treatment for eczema, but a thousand, which proves that there is not a single good one"

As every one is familiar with the etiology and pathology, and also with the older routine remedies, an effort will be made to show some of the indications and the contraindications of the Roentgen rays A great deal has been said and written in regard to the value of the rays in acne and eczema, but a large percentage of cases have not been treated intelligently

The employment of the Roentgen rays in dermatology is a branch of medicine that demands a knowledge of the disease under treatment as well as a knowledge of the physiologic actions of the rays and the variations necessary to produce the desired results Then, in order to treat skin lesions with the *x*-ray, the physician should either be familiar with the rays, as well as dermatology, or else refer his patients where they can have the proper treatment when the rays are indicated The following replies of Prof V Neuman of Vienna and Dr Leslie Roberts of Liverpool, England, to Dr Biddle's circular letter, published in the *American Quarterly of Roentgenology* show what divergent opinions exist

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty eighth Annual Session, June 1907

> DR LESLIE ROBERTS, Liverpool In reply to your questions relating to the *x* ray treatment, I may say that I consider the treatment of acne rosacea, eczema, or psoriasis by the *x* rays to be irrational, improper, and utterly inadmissible on scientific grounds I am afraid that those who talk of "curing" these diseases by rays do not clearly understand the nature of these diseases
>
> PROF V NEUMAN, Vienna I have had a great deal of experience with radiotherapy of acne, acne rosacea, eczema and psoriasis There are cases which can not be treated properly otherwise Of course, I use our older methods in combination with Roentgen rays Acne of the face and back is often cured radically by a few séances, but acne rosacea, with tumefaction of the nose, is only very little improved
>
> Chronic eczema, wet and dry form, yield often quickly to the new treatment, but not ulcers of the leg
>
> Psoriasis in its chronic patches, ought to be exposed strongly to *x*-rays, the acute disseminated form needs only weak séances The disease is not cured radically though
>
> The *x* rays ought to be handled only by specialists, if there are none at hand, the rays ought better to be replaced by our older methods of treatment But a specialist with much practice, will, by the use of the dosemeter of *x* rays (Sabouraud, Noire and Kienbock, with milliamperemeter) always avoids burns, therefore, in his hands, radiotherapy will never prove harmful

During the past two years I have visited a number of skin clinics in some of the larger cities and have been impressed with the different methods of treatment and the results Any one who has gone to the different skin clinics and has studied the cases and the methods of applications of the Roentgen rays and has not depended on a circular letter or some other unreliable source of technic can account for both success and failure of the Roentgen rays in dermatology In the past, defective technic has included overconfidence and rashness or timidity in the uses of the rays, and many physicians have not produced results because they were afraid of producing an excessive dermatitis, and have given an underdose

Whenever there is a reliable meter to measure the kind and amount of rays given off by a tube dermatologists will be able to employ the rays more uniformly and there will not be such difference of opinions

ACNE

After a faithful trial in the mild cases, of both local and constitutional treatment for two months, if there is no marked improvement, then I apply the Roentgen rays but in pustular and indurated acne time is usually lost by waiting In this class of cases the time, in order to affect a cure, is not shortened, but the recurrences are less

The local treatment of acne consists in the removal of *comedones* infiltrates and abscesses Jacobi states that the employment of sulphur and ichthyol soaps and hot water accomplishes the removal of excessive fat and opens the follicles so that their contents can be evacuated Subsequent vigorous scaling of the skin is of use, and may be carried out by means of resorcin or naphthal paste or by painting with tincture or iodin or iodin glycerin

Now the Roentgen rays remove the comedones and usually this takes place during the first few treatments, it is most likely due to the first or stimulating actions of the rays Following this, there is marked desquamation and, thirdly, a decrease in the size of the sebaceous gland

The first two effects of the rays can usually be accomplished by medication and will generally cure the mild cases, but medication has little or no effect in decreasing the overactive sebaceous glands In pustular acne, the rays seem to have a fourth action on the staphylococci by rendering the soil inert

In treating cosmetic lesions like acne, the greatest caution must be used to prevent any undesirable results It is absolutely necessary to study the quantity and quality of the rays In selecting an acne tube, one is taken which maintains a uniform vacuum and which can be kept low A new tube is never used unless the rays are passed through an aluminum filter I have been in the habit of employing a tube very low in vacuum, one which will scarcely show the bones in the hand, and with the anode placed at eight inches from the skin and with one and a half milliamperes of current passing I give from five to ten minutes' exposure, depending on the condition of the patient, until nine treatments are given By this time I am usually able to determine the amount of radiation necessary to cure the patient As it is for the cosmetic results that these patients are treated, and as it is necessary to vary the quantity of radiation necessary to produce the best and most uniform results, three weeks of trial treatment seems advisable By this method of varying the amount of radiation results should be uniform and all danger of an excessive dermatitis avoided Probably there is no skin lesion in which a more exact amount of rays is necessary to produce uniform results It might be compared to radiography, where every one realizes that unless the proper exposure is made no picture is produced As before stated, the amount of radiation varies with the individual case and may vary as much as in taking a picture of a hand and a shoulder.

ACNE ROSACEA

Acne rosacea, while more resistant, has yielded the best results when glandular inflammation predominates The Roentgen rays appear to act in this condition by causing atrophy of the sebaceous glands and by setting up an irritative desquamation The principal effect is due to the action of the rays on the sebaceous glands According to Gassman, the cure of acne rosacea is due to a destruction or degeneration of the blood vessels It can be readily understood that since the *x*-rays have a selective affinity for glandular structures it requires less radiation to decrease the activity of the sebaceous glands than to cause absorption of the hypertrophic growth of connective tissue or the destruction of the small vessels

ECZEMA

Internal treatment is important in a certain percentage of cases, but as a large majority of patients suffering from eczema are in perfect health, and the disease is due to some local cause, local treatment only is necessary Among the local measures which may be employed are drugs with which all physicians are familiar, and physical agents Of these, radiant energy is probably the most efficient

The rays are certainly not indicated in the acute forms of eczema, unless it be to relieve the pruritus which can not be controlled by other remedies, and in most forms of subacute eczema But in many chronic and rebellious cases which resist other therapeutic agents the *x*-rays have proved efficient. The effects of the rays are most marked in squamous eczema, since it is more chronic and less liable to yield to other forms of treatment. It requires more intense radiation to relieve the pruritus in papular eczema and there is a greater tendency to recurrence than in any other form of the disease It has been noted by a number of operators that after a few applications of the rays the discharge and itching ceased The rationale of Roentgen treatment lies in its stimulation of metabolic processes, especially in chronic inflammations It has been stated that the rays influence eczema by stimulating the bio-activity of the cells

In the treatment of eczema by the rays, the location and type of the disease should always be carefully considered, and the indications and the contraindications determined In deciding on the dose the character of the lesion, its chronicity and the vitality of the patient must be taken into consideration Results can only be accomplished by employing rays in proportion to the condition of the patient In chronic squamous eczema, the local condition of the skin is poor, nutrition is low and there is little vitality In these cases more than a mild dosage is liable to result in a severe dermatitis In some cases it may be necessary to give rather large doses, but the clinical experience of the operator should guide him, and experimental knowledge obtained by milder dosage in the same case should be employed before a severe dose is given While almost any form of Roentgen treatment may effect a cure of eczema if persisted in long enough, if rays of low penetration are used, the treatment is hastened A low tube is not only more efficient, but prevents unnecessary exposure of the underlying tissues With the anode placed at ten inches from the surface, with one and a half milliamperes of current passing, providing the patient is in good physical condition, a safe rule to follow is to start with ten minutes' exposure, three times a week until from eight to ten treatments are given In my experience, this amount of radiation has been sufficient to clear up the lesions in many cases of squamous eczema, but in some it has been necessary to give a second course of treatment.

THE THERAPEUTICS OF TUBERCULOSIS OF THE SKIN *

GRANVILLE MAC GOWAN, M D
LOS ANGELES CAL

It may be deemed axiomatic that wherever tubercle bacilli find a resting place in an organism and there set up their characteristic histologic changes if the focus be so localized that it may be removed entirely, by any agency whatever, this removal will constitute a cure of the disease

On the recognition of this depends the value of any treatment for tuberculous lesions of the skin Careful study of microscopic sections of infiltrative types of lupus immediately shows why many of the measures proposed for treatment have no value, except as mere palliatives for some of the annoying symptoms I have too often seen the claim of a cure made when all that had been accomplished was the temporary healing of an ulcerating surface, the claimant being entirely unaware that a non-ulcerating patch of lupus is often more difficult to get rid of than one that has already broken down

All tuberculous lesions of the skin are granulomata and consist of an infiltration of small round cells, accompanied by giant cells surrounded by a zone of epitheloid cells, sometimes but not always containing tubercle bacilli

The ease or difficulty of treating a patient successfully depends on the depth of the tubercle deposit, its extent its situation, the resistance of the subject to the bacillus of tuberculosis as evidenced in his anamnesis, and the character of the local remedy selected for its control and the vigor with which it is used

An internal treatment to be effective alone must cause the tuberculous patches to disappear and perfectly cicatrize There are no remedial agents which may be depended on to work this wonder, though it sometimes seems as if the goal were about to be reached Physicians may be deceived by the common experience that chronic lesions of the skin get better or worse, following more or less favorable hygienic surroundings, and are apt to attribute the betterment to some drug given when the fresh air, sunshine and the improved digestion are the factors which have produced the change

All dermatologic works repeat parrot-like the injunction to give plenty of cod liver oil to lupus patients In young persons where its absorption can be assured without digestive disturbances it may be given daily as an inunction in doses of 30 c c to 60 c c It is best given after a hot bath and in a warm room I have many times been convinced of its definite therapeutic value in the treatment of tuberculous conditions of all kinds The objections to its use in this manner is the intense fishy odor which the following formula nearly does away with

℞	Heliotropin	gr iii	18
	Adeps lanæ	℥vi	180
	Olei morrhuæ	℥ix	270

Given by the stomach I think it will more often act as a hindrance to the cure than as an accelerator Arsenic, if it is tolerated, more particularly if combined with manganese, iron and the bitter tonics is a valuable adjuvant as a roborant But mercury in doses of gr 1/6 (0 01 of the hydrargyri iodidum viride in the form of Garnier pill, or gr 1/32 (0 002) of hydrargyri chloridum corrosivum given two or three times a day, the same precaution being observed with regard to keeping the mouth clean as when mercury is given to syphilitics, is of decided value in the treatment of dermal tuberculosis This is without relation to hybrid forms where the syphilitic admixture is manifest and the necessity for specific treatment imperative

It is difficult to say exactly what value the derivatives of Koch's tuberculin may have in the treatment of tuberculosis of the skin As a diagnostic agent its importance in doubtful cases is unquestionable, as a therapeutic agent, in times gone by, it has been worse than a failure I believe that a more general knowledge and application of the opsonic therapy of Wright may demonstrate its great usefulness

In addition to roborant measures one must use local applications or procedures, having always in mind the necessity for the complete removal of the diseased tissues and the varying grades of infiltration, malignancy and destructiveness of the disease process induced in different people by the irritative action of the tubercle bacillus

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-eighth Annual Session June 1907

Whatever local measure is used and whatever the apparent success attending its use, the pathology of the disease must never be forgotten Just so long as one "tuberculome" is left anywhere within the limits of the diseased skin, lupus is not cured It is only after years of observation of the absence of lesions that we can positively affirm a cure

LOCAL METHODS

These local methods may be classified conveniently following Brocq[1] and Leloir[2]

1 *Bloody* (a) Ablation, (b) curetting, (c) scarification, (d) electro-cautery or Paquelin cautery

2 *Elective caustics* (a) Salicylic acid with creosote, (b) pyogallic acid, (c) silver nitrate, (d) silver lactate, (e) lactic acid, (f) Liq antimony chlorid, (g) electrolysis

3 *Light rays* (a) Phototherapy, (b) radiotherapy, (c) heliotherapy

The choice of method depends on the type of disease and the individual to be treated Phototherapy, in my mind, is the ideal treatment for the deeper forms of lupus It is powerful for good and, so far as I can learn, never harms Its drawbacks are such as preclude its general use Departure from the method worked out by Finsen[3] does not seem to be successful "Better than Finsen's" apparatus has from time to time appeared in the market, but it does not stay, because time and a careful observation of little things are essential elements in the contract to cure by the Finsen light The element of time itself is prohibitive excepting when the disease is confined to a small space, or in the case of those who can not pay at all, or those who can pay anything asked It is a treatment for the very rich or the very poor

Radiotherapy in the hands of skilled Roentgen-ray operators has accomplished wonders in the treatment of lupus I have time and again seen it cure tuberculous fistulæ, soften and break down the dense scars of sclerosed lupus, and melt scrofulo-tuberculous gummæ about the mucous orifices where repeated and prolonged surgical measures had failed to relieve or cure I have as often seen it fail to permanently destroy more superficial forms of ulcerative tuberculosis of the skin, and have twice seen it apparently establish on such lesions epitheliomatous changes requiring radical surgical intervention Even very recently I have seen new tuberlomes develop in surrounding tissue during the daily treatment of a sclerous patch of lupus Quite often I see deformative telangiectases occur in the scar, and fresh outbreaks from unobliterated lupus nests are not of uncommon occurrence in cases discharged as cured

Notwithstanding the improvements in apparatus and operative technic, the Roentgen ray is not a safe agent for the unskilled to use The best operators from time to time occasion, by the very necessity of the intensity of action required in affecting deep seated lesions very distressing attacks of dermatitis though they uniformly dislike to acknowledge it, and "burns" are not uncommon with ignorant and irresponsible operators Add to the frequent uncertainty of its curative action the initial cost of the machine and the heavy charge of maintenance and we easily see why the greater number of cases of lupus will always have to be treated by other methods It is of these that I more particularly desire to speak They, too are of most value in the hands of experienced and skilled persons, but their success is dependent on observation and patience more than anything else and they require no great outlay of time or money

ABLATION

There are a certain number of cases of dermal tuberculosis which are so situated that ablation is easy and absolutely successful No medical man should ever undertake to remove any malignant neoplasm by operation if he is afraid of losing his professional reputation by the deformity of the scar which may result therefrom The first essential is that the new growth be removed in its entirety, that the incision be wide enough from the margin of the diseased area to go all around and beneath it until sound tissue is reached for the healing and that all structures intervening—skin, muscle, bone or tendon—be removed Defects may be nicely tailored by flap sliding or skin grafting Lang[4] has been the chief exponent of recent years His reports of results are excellent and he has the courage to apply it to lupus of almost any extent I have had good success from ablation and present here illustrative cases

Case 1—A woman, aged 65, with disseminated lupus of the face of two years' duration (Fig 1) At the right inner canthus an epithelioma had developed on a tuberculous base The photograph shows the results obtained by excision and flap sliding More than one third of the lower lid was entirely removed and a new one fashioned from the cheek (Fig 2) The tuberculous process had involved the outer third of the orbital plate of the frontal bone and the entire outer part of the orbital plate of the malar bone, and the overlying skin and muscles These tissues were excised and the wound healed by granulation as it was impossible to cover the defect by flap sliding or skin grafting The other patches on other parts of the face were removed, some by arsenic paste, some by curetting and the application of a 50 per cent zinc chlorid solution This woman was treated for six months by a competent and skilled Roentgen ray operator, the disease continuously growing worse

Case 2—A non ulcerating patch of lupus (Fig 3) was removed from the lumbar region of the back of a woman, aged 39, on whom it had existed from her fifteenth year, slowly extending year by year Note the depth of the tissue removed, the disease extending almost to the muscle beneath This patch was 9 cm (3½ in) long, 9 cm (3½ in) wide, and 6 cm (2⅓ in) deep Recovery by granulation was complete in four weeks She would not agree to skin grafting She had received treatment for three months every second day by the Roentgen ray from an Omaha specialist without benefit It was painful when she came to me and this feature she stated developed during the Roentgen ray treatment

CURETTING

The value of this method of attack on tuberculous foci depends on the thoroughness with which it is done It is necessary to use firm sharp instruments, both large and small of the Volkmann and Besnier types (Figs 4 to 7) These instruments should always be sharp Without ruthless destruction of sound tissue the use of the curette must yet almost be brutal in order to be curative I think spreading of the disease after curetting is only to be feared where gentleness is observed in the operation

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[1] Brocq (L) Traite Elementaire de Dermatologie Practique Paris, 1907

[2] Leloir Traite de Scrofulo Tuberculose de la Peau Paris 1892

[3] Finsen and Die Mitteilungen aus Finsens Medicinske Lysinstitut in Kopenhagen Leipzig 1903

[4] Lang (Edward) Ergebnisse von 210 Operiten Lupus fallen etc Wien 1905

THE ANESTHETIC

In curetting lupus nodules I always prefer ether anesthesia The operation may be done under Schleich's method of infiltration anesthesia with a very dilute solution of cocain and adrenalin chlorid in physiologic salt solution The neighboring skin must be thoroughly cleansed and disinfected and the needle entered well outside of the diseased area, the infiltration first made all around and beneath the patch in the sound tissues before entering the patch at all The diseased area should also be mapped out by some indelible substance before the infiltration commences for the process entirely changes the geography of the neighborhood

THE OPERATION

In commencing the operation it is best to sear all of the ulcers and make a few thrusts into any deep-seated nodules or hardened tissues with the electric cautery or Paquelin points heated to a dull red heat This disinfects the debris of the first curetting and renders it surprisingly easier, particularly in sclerotic forms The whole area of disease should be gone over thoroughly with the larger curettes, then each softened area is entered with the smaller ones enough force being used to remove all obviously diseased tissue and also to break down the bundles of tissue fibers between outlying lupus nodules Scissors, knife and forceps may be used to assist in the removal of ragged structures after the curetting

I believe much of the curative influence observed from the free use of the curette on tuberculous lesions is to be attributed to the inflammatory reaction set up in the surrounding tissues by the mechanical insult causing subsequent destruction of all deposits of low vitality in the immediate zone of operation The curetting should be slow and thorough until each visible nodule has been broken into and emptied of its contents The hemorrhage is controlled with hot compresses and any bleeding point that persists may be touched with stick silver nitrate

It is my custom to cauterize separately each wound with a 50 per cent solution of zinc chlorid The application is made by a number of small swabs of cotton rolled on wooden toothpicks A swab is dipped into the solution and, after shaking thoroughly, applied to the dried curetted nodule and bored into its every nook and cranny This cauterized surface immediately starts to bleed again, a compress moistened in a hot weak corrosive sublimate solution is applied to it, a fresh swab obtained and a similar application made to each and every one of the exposed nodules The parts curetted are finally well washed with alcohol and a moist dressing, made by adding boric acid, seven parts, and salicylic acid, one part, to hot water, one thousand parts, and which is commonly known as Thiersch's solution, applied

The dressing is removed twice a day or oftener if the comfort of the patient requires it, its continuous moisture is assured by a covering of gutta percha tissue The slough from the zinc comes away usually in less than ten days, and the wound is nearly always healed before the fourteenth day Where there is a doubt existing as to the amount of tissue involved, and it is desired to clearly map out the infiltrated nodules beforehand in non-ulcerating or dry forms of lupus, this may well be done by the application for a few days of a thick plaster made from common rosin kitchen soap or a 25 per cent plaster of salicylic acid or Biersdorf's 20 to 40 salicylic-creosote plaster mull, or a 50 per cent pyrogallic acid paste

Formerly it was my custom to use the galvano-cautery or the Paquelin cautery to each nodule after curetting I am satisfied, however, that this is bad practice, for it is frequently followed by keloidal scars I think it is more useful beforehand to disinfect the ulcerated surfaces and render curettement easier Should nodules subsequently be observed in the scar they may nearly all be treated and removed by the agents referred to under electric caustics It sometimes may be necessary to curette portions of the patch again

LINEAR SCARIFICATION

Another bloody method which at one time had great vogue but now has fallen into disuse is that of multiple linear scarification as practiced by the celebrated teacher, Vidal Properly carried out, this gives the least deformative of scars following treatment of severe cases of lupus The objections to it are that it is painful, incurs the loss of considerable blood at short intervals, and the treatment lasts for almost, if not quite, as long a time a phototherapy American patients on the Pacific coast are reluctant to submit to it, and I use it only in special cases for definite reasons It is warmly advocated by Brocq,[1] who trained in the San Louis Hospital, shows plainly in his therapeutics the influence of Vidal and Besnier In lupus of the eyelids, lips and nose, where the individual is young and her calling is such that unsightly scars will take away her occupation, and she is so anxious to be healed that she will cheerfully endure the repeated infliction of pain, this is the method I prefer to use It is also of definite value in assisting the Roentgen rays and fibrolysin injections in softening up hard dense cicatrices that are not keloidal

CAUTERY

The cautery method, in my opinion, is not to be commended in the treatment of lupus unless the area is very minute and the subject will not allow an excision The electro cautery is preferable A suitable cautery point should be selected, heated to a dull red glow and introduced into the nodules The tissues should be roasted until not only the lupus tissue but a little of the sound skin is destroyed, for the electric cautery, unless its action be forced or repeated, acts very superficially

The local remedies which have been proposed from time to time for the cure of lupus are legion But few of them have any real value, and the apparent usefulness of many of them is based on the natural history of the malady and the credulity of their advocates

Those which the experience of many people has demonstrated as of worth I will now refer to These remedies may easily be obtained anywhere, do not necessitate great waste of time for the patient and require no great outlay of money by either physician or patient They will effectually destroy nearly all of the superficial tuberculous patches They are of great value in mapping out diseased areas before curetting or applying the Roentgen ray, and in the treatment of isolated nodules which may be left or which may appear from time to time in the scar or its neighborhood after curetting or radiotherapy

SALICYLIC ACID WITH CREOSOTE

The Biersdorf people in Hamburg make a plaster mull which contains 40 per cent creosote and 20 per cent salicylic acid, which is the best method of applying these drugs in the treatment of lupus Given a patch of lupus, no matter how extensive, ulcerated or non-ulcerated, the mode of application is the same A pattern is made of the part to be covered and the mull cut of the same size and shape Then many small snips are made in the plaster by folding it straight across and cutting it with the points of scissors The protecting gauze is then removed and the plaster applied There is no difficulty about it adhering, for it is very sticky If the lupus patch is crusted or covered with scabs they should be softened and removed first It acts only on the diseased portions of the skin and for a half hour or more after it is applied causes quite a severe smarting pain in the ulcerated parts

The first plaster is allowed to remain in place for forty-eight hours, and by this time it has marked and mapped out the situation of all nodules lying near the surface of the skin, eaten well into many of the softer ones and broken the epithelial layers over the deep ones Its action causes a secretion of an abundant sticky seropus, for the easy exit of which I cut the holes in the plaster before applying it, this dries into irritating gummy crusts and produces a dermatitis of the surrounding skin much like an eczema The plaster is applied and removed once or twice daily for fourteen days, the secretion varying with the abundance of the ulceration, but it is frequently sufficient to nearly float the plaster out of place, particularly on the face of males, where it is raised by the growing beard The pain is rather severe after each fresh application, but is rarely sufficient to require any narcotic

The appearance of the patch is not unlike that of a piece of wood that has been bored or honeycombed by the teredo The irregular-edged ulcers are covered by a whitish yellow slough, the necrotic process extending in soft lupus very deep into the skin Where the plaster has destroyed the nodule entirely it is not uncommon to see it skin over and heal perfectly while the plaster is still in position After the fourteenth day the plaster is omitted and a moist Thiersch dressing applied until the ulcers heal, which is usually in less than a week If all of the nodules have not been destroyed by this first course another course may be immediately entered on after the removal of the moist dressing, and a third or even a fourth may be needed to effect a cure

The following case illustrates the usefulness of this method A healing being obtained in a most satisfactory manner ten years ago, I have only the photograph of the "after taking," the negative and prints of the original condition having been destroyed in a fire two years ago The second photograph shows the same person at the present time April, 1907, when the recurrent nodules are being conquered by the mitigated silver nitrate and liquor antimonii chloridi The case in its history illustrates beautifully the usefulness of the plaster of curettage as I advocate it, of cauterizations by silver nitrate and antimony and the complete failure of the Roentgen ray to cure or alleviate

Case 3—Mrs J B O'M, aged 32, housewife, married, of good previous history, was referred to me by Dr J T Stewart Feb 8, 1897 About one year previously a tuberculous eruption appeared on the anterior part of the left leg and on the forehead The nodules were small and partook more of the scrofulo gummatous than of the lupoid type This had been treated by local measures, chiefly protective, and antisyphilitic treatment internally without benefit Plasters of salicylic acid 20 per cent, and creasote, 40 per cent, were applied by me for fifteen days, after photographing The ulcerated surfaces were allowed to heal under the boro salicylic solution and then the caustic plaster applied for fifteen days more The photograph (Fig 8) was taken at this period of the second course The disease disappeared entirely, but there was a fresh outbreak in September of the same year on the left cheek. This was easily controlled by the same remedies In 1898 she had a tuberculous ankle joint which was treated by excision of the diseased parts with perfect recovery of joint function In 1900 she had tuberculosis of the left elbow which also was treated by curetting and the application of zinc chlorid solution, and speedily healed

In April, 1904, she returned with ulcerating lupus of the face of the butterfly type She was sent to a competent Roentgen ray operator and for two months had exposures every two days with positive detriment Later the 20 to 40 salicylic creasote plaster was applied with great benefit, but some patches on the forehead, cheeks and lips persistently refused to improve beyond a certain point, they were curetted July 8, 1904, under local anesthesia This resulted in a practical cure She has been able to work at her occupation as a copyist ever since New nodules appear from time to time and are treated by curetting or the application of the liquor antimonii chloridi, mitigated silver stick nitrate, or lactic acid Her condition at the commencement of April, 1907, is seen in Figure 9

SILVER NITRATE

Small nodules may be cured and larger patches treated successfully by the mitigated stick of silver nitrate whose affinity for and destructive influence on tuberculous tissue seems lately to have been lost sight of A molded cone of silver nitrate carrying 10 per cent of potassium hydroxid (caustic potash) sinks into a tubercle of the skin like a knife into a piece of soft cheese and this is diagnostic, for it does it with no other tissue It completely destroys all of the lupus tissue it can reach For tiny nodules or small fistulas a fine silver probe heated in a flame and then placed for a second in contact with the silver nitrate stick melts a portion of it, which immediately fuses itself on the point of the probe This may then gently be forced into the "lupoma," destroying it The black crust requires no dressing so long as it remains dry, but if pus forms beneath the eschar should be removed and a moist Thiersch dressing applied

LACTIC ACID

Larger ulcers which refuse to progress toward healing may be cocainized with a little of the powder or some 10 per cent solution and then cauterized with some pure lactic acid dropped on dry cotton packed in the wound The surrounding skin should be protected with some resin or other heavy cerate After from ten to thirty minutes the cotton is removed and a Thiersch dressing applied I have not found lactic acid as useful in the treatment of nodules of the skin as it is in those of mucous membranes, where it has become my agent of first choice

Silver lactate has the destructive and selective properties of lactic acid and silver in the treatment of tuberculous ulcerations of the skin I employ it in the form of a 20 per cent ointment made with simple cerate This is worked into the meshes of strips of gauze by the hands covered by rubber gloves and used to pack the ulcers

I have experimented with this agent considerably It is well worthy of recognition in the treatment of ulcerative scrofuloderma and lupus Its drawback is the dirty stain it produces on the skin of the patient and often that of the surgeon, for the lactate, like the nitrate of silver, is decomposed by light rays

ANTIMONY

Antimony in the form of liquor antimonii chloridi is a most dependable agent for destroying small lupoma I modify Unna's method of application Beechwood toothpicks are dipped into the solution and then inserted in the nodules, which is easy of accomplishment without undue force They are allowed to remain in position for about ten minutes, even removed and replaced by others if the nodules are deep

Unna then cuts them off, leaving the points in the skin to slough out This I do not regard as necessary, but remove them after I think the part is sufficiently acted on by the drug and apply a moist Thiersch dressing, if the cauterized points are multiple or were the previous seat of suppuration

PYROGALLIC ACID

There are times when the salicylic-creasote plaster is useless or the sick person objects to its odor Recourse may then be had to a salve or paste of pyrogallic acid, which also has selective action on the diseased tissues It is best used as a 50 per cent paste and, as it acts better in the presence of calomel, I add 10 per cent by weight of this drug and enough terra silesia to the excipients—vaselin and lanolin—to make a flexible paste This is spread on linen cloths cut to fit the diseased part, and these cloths should be covered with gutta percha tissue as a protective The paste is applied in cycles in from five to fifteen days and renewed once or twice a day Each time it is renewed the ulcer should be cleaned gently with gauze or cotton and as much of the resulting brownish yellow slough picked or cut away as is possible without irritation The paste should not be omitted until it ceased to have a cauterant effect After its removal a moist Thiersch dressing usually will be found to be the most satisfactory treatment

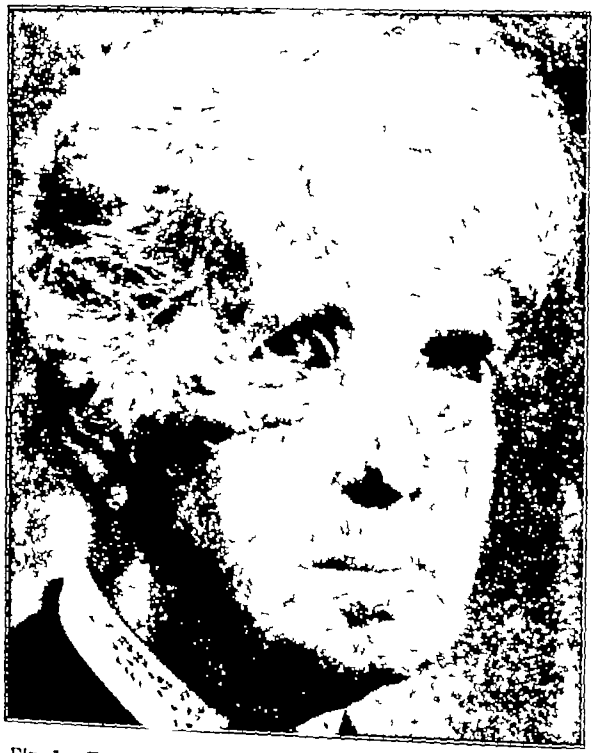

Fig 1—Excision of tissues about the canthus and of the right lower eyelid (one-half) for cancer developed on a patch of lupus defect replaced by flap-sliding nose treated by curettement and zinc chlorid solution chin treated with arsenic paste. Photograph unretouched

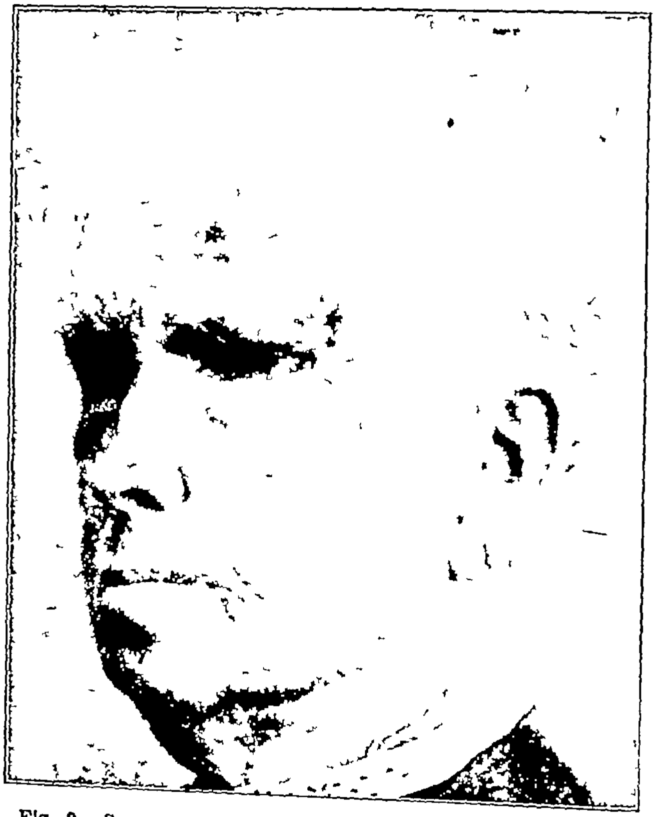

Fig 2—Same subject as Fig 1 Removal of large portion of orbital plate of frontal bone and entire outer and superior orbital plate of malar bone together with the affected skin, healing by granulation. Photograph unretouched

As a résumé of my experience and observation in the treatment of lupus I believe that while the Roentgen ray is, in the hands of a skilful operator, the most effective agent, all the patients can be cured within a reasonable time without it That success follows persistence on the part of the medical attendant and patience with faith in ultimate recovery on the part of the subject

COMBINED TREATMENT

The combined or mixed treatment consists of the preliminary preparation of the field of operation by agents that lay bare the lupoma Then the ulcerative surfaces are sterilized by the electro cautery and this is followed by ablation or curettage, thorough but not mutilating, with broad sharp curettes, followed by smaller and finer instruments of the same nature This is followed by a second sterilization of the field of operation by alcohol and hot solutions of corrosive sublimate, and the subsequent chemical cauterization by a careful application of a 50 per cent solution of the zinc chlorid to the curetted surfaces The wound is then treated by moist dressings of boro-salicylic acid, which acts as antiseptic and keratolytic, until the healing of the ulcers Careful searchings day after day for residual nodules in the scar, which, if found, are destroyed by the mitigated stick of silver nitrate, lactic acid or liquor antimonii, will effect an apparent and usually a real cure of the majority of cases of the disease within a period of three months, with a cicatrix that is not deformative

About the eyelids, lips and nose, where the only consideration is to obtain healing with a minimum cicatrix, multiple linear scarification gives best results Where the lesions are superficial the best treatment is the strong salicylic acid creasote mull or pyrogallic acid paste, with calomel repeatedly applied in several cycles of fourteen days each

Lupus and various tuberculous lesions of the skin are not rare in the state in which I live, as it has become a haven of refuge for the tuberculous Strange to say, in Southern California I have seen more cases develop between the third and eighth decades of life than in the very young

HELIOTHERAPY

There is another treatment to which attention should be called This may or may not be original with me I do not recall ever having read of any one using it, but I have not read everything and there is very little new

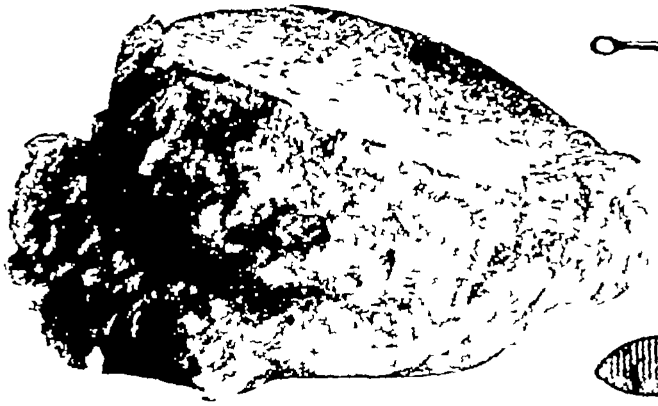

Fig 3 —Patch of skin and deeper tissues removed from back of woman Non ulcerative lupus Size, 9 cm by 9 cm by 6 cm

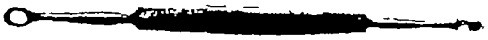

Fig 4 —Prince Morrow curette

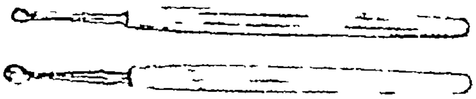

Fig 5 —Besnier curettes

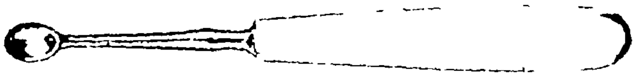

Fig 6 —Volkman curette

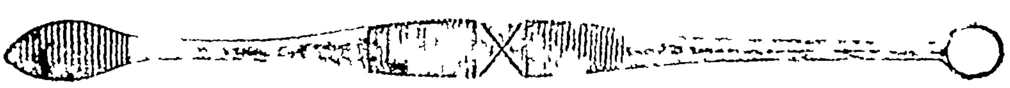

Fig 7 —MacGowan curette

For a number of years I have at times made use of a kind of heliotherapy in the treatment of sluggish wounds and tuberculous lesions of the skin This consists of directing the concentrated rays of the sun on large wounds or large lupus patches with large lenses of broad focal distance, and on smaller areas with smaller lenses of lesser focal distance The effect sought has been double First, to obtain the stimulation from a kind of exaggerated sunshine on sluggish granulations, and second to obtain the destructive effects following the accurate focusing of the rays on definitely diseased tissues

At first I had great difficulty in obtaining the consent of patients to submit themselves to the cautery effect of the sun rays as they feared destructive burns and subsequent suffering, but now my assurance that the pain will pass with the treatment and that frequent repetition of the procedure is not necessary usually gains the consent of the subject readily The treatment is carried out as follows The subject sits or lies facing the sun The operator stands or sits in such a position that he can throw the sun rays through the lens directly on the diseased tissues and change the focus of the instrument at will and at the same time observe the tissues which are being treated The eyes of the operator should be protected with dark glasses for the effect of gazing steadily at the concentrated light as it moves about the patch is blinding unless the eyes be covered All of the neighboring parts should be protected with lead foil as is done in prolonged Roentgen ray exposures The patch of lupus alone is exposed The lens then is so held that the rays while concentrated are not accurately focused on the diseased structures and the lens is moved so that the light rays of 'exaggerated' sunshine move around and around the diseased area for from five to fifteen minutes an occasional short rest being taken to relieve the operator's hand and accustom the patient to the treatment The rays then are focused accurately on some point in the patch and the lens slowly moved the focal distance being kept the same, over the whole lupus area The pain at the time is quite severe but bearable The tissues first redden the individual blood vessels become engorged and expand, grow rapidly edematous, rise above the surrounding tissues and take on a yellowish brown and then an opalescent tinge This is the time to cease In twenty-four hours the cauterized tissues dry into a yellowish crust, which remains in position for a week or two before it drops off leaving a smooth but slightly depressed and undeformative scar Any point that escaped may be put to the test for tuberculous nests and submitted to a second treatment The following case illustrates the value of this treatment

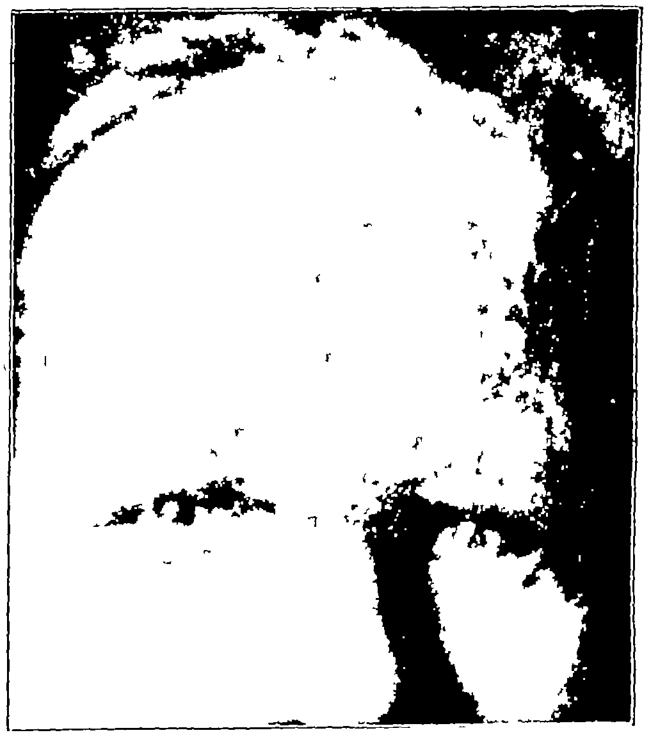

Fig 8 —Case 3 taken in 1897 after fifteen days application of Unna's 20 to 40 salicylic creosote plaster mull Photograph unretouched

Case 4 —Mrs B A G, married, aged 34, came to me April 12, 1905, with lupus of the upper part of the bridge of the nose, extending out on the cheek on each side, the patches having approximately the same size and shape as shown in Figure 10 There was also one patch in the center of the right side of the forehead, one small one over the left eyebrow, one within the concha of the right ear, and one on the right cheek over the malar prominence There was a previous history of tuberculosis of the lungs active ten years ago but cured at the time of consultation. The four were first treated with the 20 to 40 plaster mull of salicylic acid and creasote and subsequently with antimony chlorid and other caustics. There was much betterment but no cure of the larger patches on the nose but an apparent cure of the smaller patches in the ear, on the forehead and on the cheek.

Treatment by the lenses and sun rays was commenced June 1 1906 and one patch was treated at a time at irregular intervals until Sept 25 1906 with practically perfect results. No other treatment nor application was made. The character of the scars is shown in the accompanying photograph (Fig 11). They are not deformative.

422 Merchants Trust Building

DISCUSSION

ON PAPERS OF DRS KASSABIAN, BOGGS AND MAC GOWAN

Dr. M B Hartzell, Philadelphia, said that we should not lose sight of the fact that patients with lupus were cured before the introduction of the Roentgen rays and the Finsen light. He said that he had listened in vain to hear some one say something about the untoward effects that sometimes result from the Roentgen rays, and with which we are all more or less familiar. He spoke particularly of the marked atrophy of the skin which not infrequently follows the Roentgen ray treatment and mentioned the case of a young woman who was treated by this method for a disfiguring form of acne. The treatment proved satisfactory so far as the disappearance of the acne was concerned, but it left her with the seamed and wrinkled face of a woman of 75. Among the cases of eczema that are most successfully treated by this method are those in which patches occur on the backs of the hand. In these cases he has often seen marvelous results.

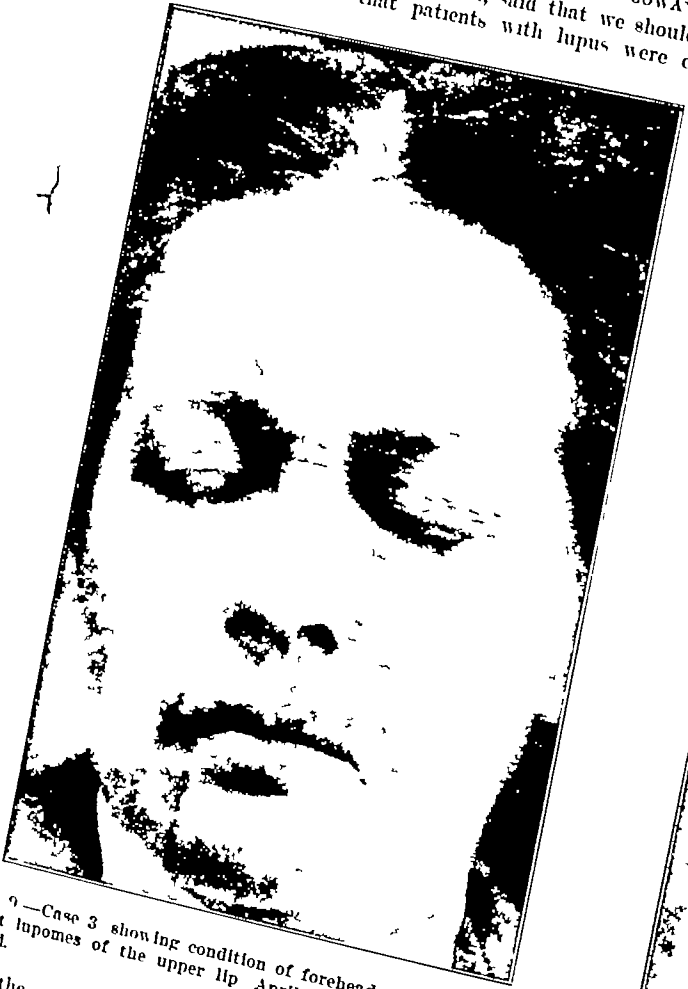

Fig 9—Case 3 showing condition of forehead and face with recurrent lupomes of the upper lip April 1907. Photograph unretouched.

Dr. G. E. Pfahler, Philadelphia, said that the papers of Drs MacGowan and Kassabian impressed on him the fact that in the treatment of these various affections a single remedial agent can not be depended on. One man with the proper technic and equipment, will get marvelous results from one agent, while another man with the same agent, but improperly equipped will get poor results or none at all. Dr Pfahler agreed with Dr Hartzell that the Roentgen rays may prove harmful, and that they should never be used in cases in which another remedial agent will accomplish the same result. He believes that we are prone to use the *x* ray too frequently and with too strong a dosage especially in skin diseases. Nature should be allowed a little more time after the lesions have been sufficiently stimulated. Perhaps the ideal treatment would be to give a single dose, and then await its effects. For the past year he has been trying to perfect the technic for the removal of superfluous hair, and he agreed with Dr Schamberg that physicians should hesitate in treating these patients with the *x* ray. In the cases in which he has undertaken it, he has done so under protest. By an exposure of thirty seconds he has been able experimentally to remove hairs without doing any damage to the skin. With this technic which is not yet completed, the hairs have been removed but not permanently and he mentions it as an example of what may possibly be done with the *x* rays with good technic.

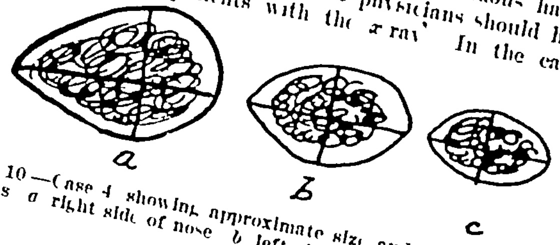

Fig 10—Case 4 showing approximate size and shape of patches of lupus *a* right side of nose *b* left side of nose *c* top of nose

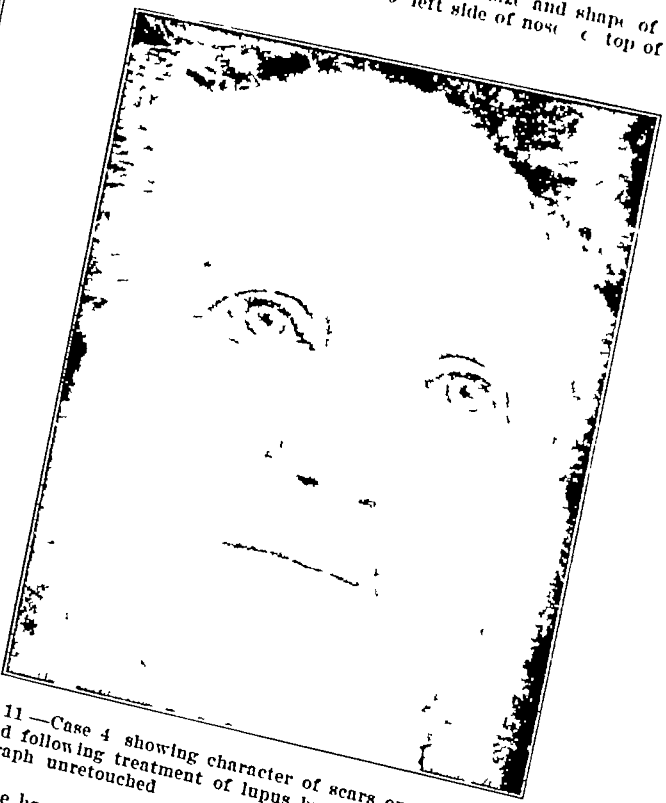

Fig 11—Case 4 showing character of scars on nose cheeks and forehead following treatment of lupus by heliotherapy with lenses. Photograph unretouched

Dr Charles Leonard, Philadelphia, said that he indorses what Dr Kassabian said in regard to the injurious effects of meddlesome treatment—both medical and surgical—in dealing with an *x* ray dermatitis. All meddlesome medication should be avoided by anyone who comes in contact with these lesions. The lesions are the result of injury to the trophic nerves, and the vitality of the tissues is much impaired. He has known of many instances in which these lesions were excised in spite of the fact that the surrounding tissues were so much impaired in vitality that it was impossible to expect eith healthy granulations or any reparative process Such treatment simply aggravates the condition, the same is true of the application of irritant ointments In Philadelphia physicians have learned to let Nature take its course in the care of these ulcers, simply limiting themselves to proper asepsis, and mild stimulation by the use of hot water baths, and application of ointments of the mildest character, such as lanolin and petrolatum in equal parts, with 5 per cent of zinc oxid Under this treatment, the chronic ulcers will heal, and the malignant transformation which is said to be so common, is prevented because all sources of chronic irritation are removed, and the devitalized tissues are allowed to regain their normal vitality, which is essential to reparative processes In the treatment of lupus, particularly that effecting the nose, Dr Leonard has seen excellent results following the *x* ray treatment, with scarcely a perceptible scar As the papers have shown, successful treatment is dependent on accurate powerful treatment adapted to the needs of the tissues and lesions involved Failures are certain to result in the hands of those deficient in technic and timid because they are ignorant This is true of all medication, as has been clearly demonstrated by Dr MacGowan's paper

Dr. Jay F Schamberg, Philadelphia, said that he is in general accord with the statements made in the papers under discussion The Roentgen rays, properly applied form an important addition to our therapeutic armanentarium At the same time physicians are less enthusiastic in their claims concerning the results of the *x* ray treatment in dermatology than they were some few years ago The *x*-rays are of decided value in acne, but the method should be used in conjunction with other approved measures Dr Schamberg has found the treatment more efficacious in the deep pustular varieties than in the mild superficial papular types In eczema his best results have been obtained in the recurrent vesicular type involving the hands and feet—those rebellious varieties which recur month after month and year after year, and which are comparatively little influenced by other methods of treatment In the treatment of superficial diseases of the skin, the older methods of treatment found to be of value should be employed and the *x* rays used as an adjunct and auxiliary in as small degree as possible By thus employing the minimum quantity of *x* rays to assist in effecting a cure, much greater security is assured against producing undesired structuarl change in the skin

Dr R H Montgomery, Youngstown, Ohio, said that he has never seen any untoward effects from the use of the ray, in spite of the fact that for a number of years he employed them in a comparatively reckless manner He recalled particularly one enormous epithelioma of the face which he succeeded in curing after the patient had been given up by the surgeons, and at that time he knew little about the proper dosage and technic He has also used the remedy in acne and lupus vulgaris, with comparatively good results, and so far as he knows, no malpractice suit has ever been brought against him

Dr Granville MacGowan, Los Angeles, said that he does not know why an old man's skin should not heal in the same way as a young man's He has operated on many patients over 80, and they recovered after serious surgical operations The trouble with many surgeons in dealing with epithelioma is that they are a little timid, fearing to remove much tissue lest it should leave a bad scar on the face, which might be regarded in the community as a reflection on their skill In his paper he said that there is nothing he could recommend that is new, but there is one method of treatment which he forgot to mention, and which may be new to some, he has frequently resorted to it in the treatment of lupus about the face or hands, with excellent results—that is the application of the direct rays of the sun He has seen astonishing results in general tuberculosis from the simple application of the sun's rays as God gives them right out of the clear sky, in California this treatment is possible over 300 days in a year, and it occurred to him that perhaps these rays if they were concentrated on a small lupoid lesion, would prove beneficial To make these applications, he employed a small lens for small lesions, and a large lens for large lesions The operator is placed between the patient and the sun, and with the lens concentrates the rays on the lesion for a period of eight or ten minutes The treatment is painful, it hurts decidedly, and even a preliminary injection of cocain does not entirely do away with the pain Under the influence of these strong rays of sunlight the tissues undergo much the same change that we see after the application of arsenical paste They first become brownish yellow and then assume a peculiar purplish tint Within twenty four hours they dry up into a crust like that observed on old eczematous patches, this falls off in the course of ten days, leaving a perfectly smooth flexible scar

Dr M K Kassabian, Philadelphia, said that about one half of the *x* rays are absorbed in the epidermis and about one tenth in the derma He is sorry that he can not agree with Dr MacGowan that we can use sunlight in this type of cases, and he believes that when penetration is necessary, we must resort to the *x* rays

Dr Russell H Boggs, Pittsburg, emphasized the importance of the word "conservative" This means that *x* ray men should not only be conservative, but that physicians who know nothing whatever about the Roentgen rays must not judge good work by a few patients who have not been properly treated Every year we hear less and less of the enthusiastic *x* ray men, and instead of that we hear more of the conservative use of the *x* rays

TWO SEBORRHEIDS OF THE FACE

I ACNE RUBRA SEBORRHEICA II PITYRIASIFORM SEBORRHEID OF THE FACE

M F ENGMAN, M D, and W H MOOK, M D
ST LOUIS

ACNE RUBRA SEBORRHEICA

At the third International Congress of Dermatology and Syphilography, Petrini described two cases of a disease of the skin of the face in middle-aged women, which appeared in the form of small red papules, especially about the nose He recognized from the color and clinical features of this affection that it was a distinct and characteristic condition To this affection he applied the term acne rubra seborrheica In 1903 Pringle undoubtedly described the same condition in an article[1] to which he gave the title, "A Rare Seborrheid of the Face" Since that time we have carefully watched the literature for further contributions on this condition, but after a rather thorough search no further data could be obtained One of us had for years been in the habit of classing the affection above named under the term "seborrheic acne"

It seems strange that more attention has not been called to this not infrequent condition, as it is distinct and not easily confused with any other of the skin On close examination one can readily see that it has not the appearance of an acne vulgaris or simplex, and its therapeutic handling renders it in itself distinct from those affections Pringle reports only one case, and mentions several others in his contribution, but seems to have confused its etiologic features

Acne rubra seborrheica, as the title indicates, always occurs in seborrheic individuals and when we speak of seborrhea we mean the seborrhea oleosa of the older writers, characterized by oiliness of the skin, especially through the center of the face, thickening of the skin in many instances, more or less dilatation of the follicles, and possibly here and there some small scaly patches, and there may be associated with this seborrheic groundwork a few comedones with their subsequent acne Acne rubra seborrheica is, therefore, a disease which may occur any time after puberty

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City, June, 1907

[1] British Jour of Dermatol, February 190,

The disease begins as a small, follicular papule of a rose-red tint, varying in size from a pin point to a lesion as large as a split pea The lesion is more or less convex, sometimes capped by a small scale, which is closely adherent, and in the very earliest stage in the formation of this scale there may be seen a minute pustule, which quickly dries into a crust As evolution progresses the desiccation extends from the summit to the base of the papule The papule gradually flattens and remains in this desiccating condition for some time Several of these lesions may coalesce to form small patches, but this is, in our opinion, unusual, as one of the distinct characteristics of the disease is the disseminated distribution of the eruption

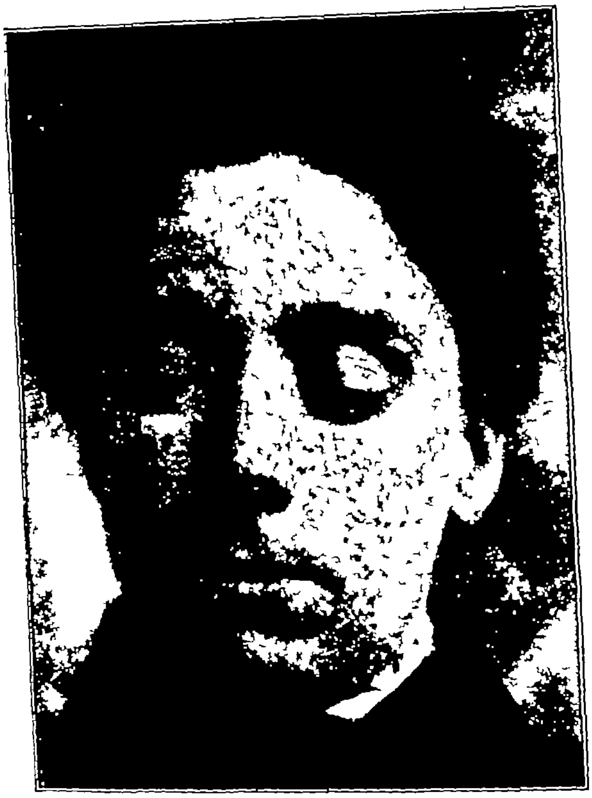

Fig 1 —Acne rubra seborrheica

Here and there is sometimes slight grouping, but it is not a conspicuous feature In the majority of cases these lesions are irregularly scattered about the base of the nose, near the naso-labial furrow, about the chin and on the forehead The nose itself is not so frequently affected as its immediate neighborhood Where the disease has existed for a long period it is widely scattered over the face and neck As yet we have seen no lesions of this type on the chest or shoulders On account of the rose-red color of the lesions when taken in their ensemble, and when closely placed together, they give the appearance of flushing, almost of a rosaceous condition Especially is this true when the patient enters a warm room or blushes and it is a fact that in all of these cases, without a single exception, a blush is easily caused, rendering the lesions, therefore, more congested and conspicuous

The disease, without proper treatment, does not undergo involution, as some of our cases have existed ten and twenty years, and have been treated in many instances, possibly, for acne vulgaris Although the condition does not as a whole undergo involution, yet here and there, where it has existed for long periods, sites of former lesions are easily recognized by a slight pigmentation, and when the face becomes congested by blushing or exertion these foci are easily discernible

Not infrequently there is a complication of some other seborrheid Petrini refers to a probable seborrheic condition of the lips and mucous membrane in one of his cases Seborrheic eczema of the scalp is, of course, most frequently associated In several of our cases there have been some slight desquamative changes of the lips, and in one case a lesion of the tongue, which was also probably of the same origin The seborrheic eczema of Unna —with the exception of the condition of the scalp above referred to—we have never seen associated with this affection When the disease has existed for a long period, the time, of course, varying as to the individual, minute telangiectases are formed on and immediately around many of the lesions in the form of thread-like vessels, and every lesion has a more dusky and rosaceous appearance We may safely assert that the longer the disease has existed the more dusky the rosaceous is its appearance This telangiectatic condition occurs most frequently in the center or seborrheic areas of the face and does not exist on the sides of the cheeks Subjectively the patient will notice possibly a slight amount of itching, and when the disease is widely disseminated and has existed for some length of time there is a decided tingling and burning, which is markedly accentuated on exer-

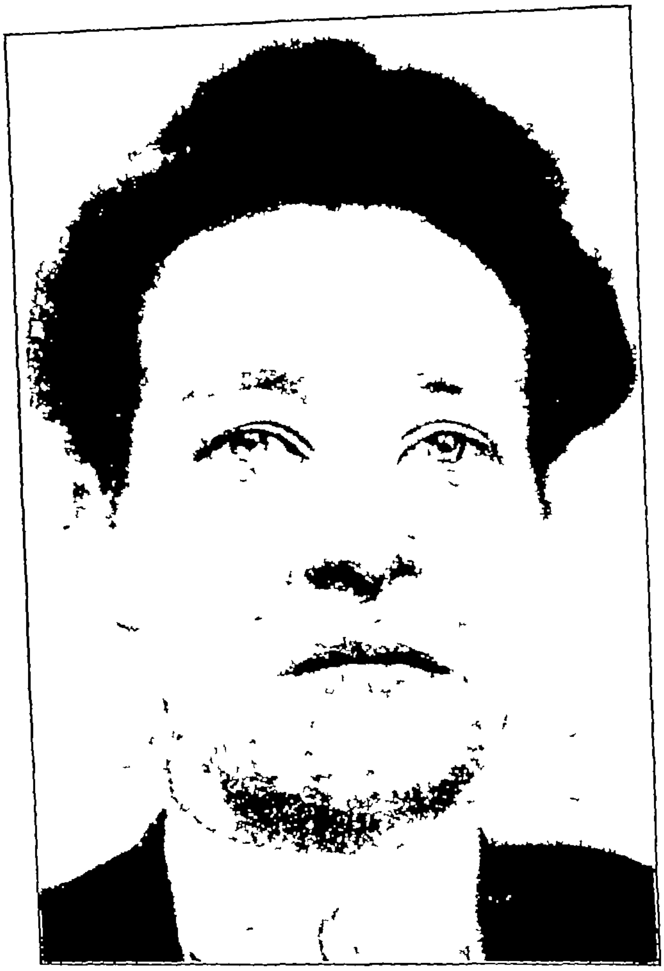

Fig 2 —Acne rubra seborrheica

tion or by anything that will cause an increase of the congestion of the face. This seems to annoy the patient in many instances and, with those in the lower walks of life, is the principal cause of their visit to the physician.

Acne rubra seborrheica always begins with the formation of a few papules, occurring on the chin and around the nose, and when it is widely distributed one can feel sure that it has existed for some years, as the disease extends very slowly. It does not appear in crops or acutely, but by gradual and slow extension of the process. Irritating applications, possibly soaps and various lotions, which the patient generally uses in the home treatment of this affection, no doubt add to the rapidity of its spread.

Acne rubra seborrheica is to be differentiated principally from: 1, A small papular syphilide; 2, acne vulgaris; 3, acne rosacea; 4, pustular folliculitis; 5, acne agminata (Crocker); 6, acne varioliformis; 7, adenoma sebaceum. The diagnosis is easily made when one bears in mind the following salient features: The seborrheic base, associated in most instances with seborrhea of the scalp; papules of various sizes, ranging from a pin point to a split pea; superficial, convex papule, capped by a slight scale or covered with fine desquamation, containing no comedo or pus; dissemination being characteristic feature, grouping a question of accident; location in the seborrheic areas of the face; duration; subjective symptoms; tendency to flushing; often small telangiectases; no pitting or scarring and, above all, a dry, non-suppurative superficial desiccating papule. These points are certainly sufficient to differentiate this papule from that of any of the above-named affections, without the therapeutic test which is a final and positive differential point and will be spoken of later.

Petrini in his original communication, classed this papule among the seborrheids for the reasons above given, viz., its association with other seborrheic conditions. Pringle, who has written most clearly on this subject and adds to his article a colored plate, says that his case was labeled seborrheic eczema, but it was finally brought to the dermatologic society as a case for diagnosis, as it presented about the same condition as that described by us, although the eruption was more widely distributed than those usually seen, and it had more of the rosaceous element about it; it was undoubtedly an extreme type of this affection. Pringle also speaks in his article of a similar case described by Dr. Colcott Fox and one by Dr. Galloway. Dr. Fox's case contained no telangiectases, due probably to its short duration. Dr. Galloway's case had a great deal of general erythema and contained numerous small telangiectases and, on first glance, had some resemblance to adenoma sebaceum, but on more careful examination it proved to be an entirely different affection.

It seems odd to us that this affection has not been previously brought to the general notice of the profession and strange that more cases have not been reported. Our statistics show, from the St. Louis Skin and Cancer Hospital and our private practices 40 cases out of 1,000 cases of skin affections; from our clinic in the Skin and Cancer Hospital we have recorded 19 cases out of 500 cases of skin diseases; in private practice 64 out of 1,000 cases of skin diseases. All of the cases included in these statistics have undergone the therapeutic test and presented the characteristics of this affection above enumerated.

On account of the location of this disease it has not been possible for us to obtain material for microscopic study. In lieu of that we will take the liberty of quoting the report of a histologic examination by Dr. Graham Little, given in Dr. Pringle's article above mentioned:

Examination with low power (No. 3 Leitz). The small elevations corresponding to the papules are seen to center round a pilo sebaceous follicle. The follicular orifice is not especially large or dilated, and there are no plugs as in acne. The hair in the follicle is not coiled on itself, or abnormal in any way. The horny layer is normal; there is no acanthosis. The only pathologic features noticeable are as follows: Around the hair follicle throughout its extent, but more especially in its deeper parts, there is an extensive infiltration of cells. In the case of the larger papules this mantle of cells exceeds two or three times the diameter of the cross section of the follicle, as measured with a micrometer eyepiece; in the smaller papules the sheath of cells surrounding the follicle may consist of only a few layers of cells, but the hair follicles, almost without exception, seem to have this surrounding envelope of cells. The collagenous bundles are displaced by these collections of cells and wall them in. The sebaceous glands appear in many cases abnormally large, but this enlargement is in no way comparable to that seen in sebaceous adenoma. The blood vessels appear normal and there is no other tissue change to note.

Examination with high power (1/12 oil immersion, No. 4 eyepiece, Leitz). The collections of cells round the pilo sebaceous follicles consist of mononuclear and polynuclear leucocytes, with some connective tissue corpuscles. There are no plasma cells or mast cells. The most careful examination for micro organisms gave a negative result.

We have attempted a bacteriologic investigation of the papules and scales, but our findings are possibly of no value, as we could only demonstrate the organisms normally found on the seborrheic skin, viz., the flaschen bacillus of Unna, the polymorphic coccus (white coccus) of Cedercrentz and Sabouraud's microbacillus of seborrhea. Whether we are to follow, in reasoning out the etiology of this disease, the dictum laid down by Sabouraud, namely, using his microbacillus of seborrhea as a pioneer or not, is a matter of taste. The organisms mentioned are found in the normal skin and it seems to us it is going rather far to state, dogmatically, that a certain bacillus, normally found in the skin, paves the way for secondary infection by other organisms also normally found in the skin. Therefore we will pass this matter over by saying that the affection which we are attempting to describe should possibly be classed, for the present at least, with the seborrheids, as it is closely associated with other seborrheic symptoms.

We do not believe that internal conditions, as far as the papule is concerned, have anything to do with its etiology. Flushing of the face, so characteristic in long-standing cases of this disease, is in our opinion secondary to the skin involvement, and is due solely to inflammatory changes produced by some infection, extending over long periods of time in a seborrheic skin. All of our cases presenting marked flushing and congestion have recovered by local treatment alone; therefore, we do not believe that there is any connection at all between this condition and the alimentary tract. Of course we are not now discussing the probable underlying seborrheic factor, whatever its cause may be.

The treatment of acne rubra seborrheica may be summed up in four words—salicylic acid and sulphur. All patients will recover in from two weeks to two months, no matter how severe, if properly treated with these drugs. In using sulphur and salicylic acid in this, as in other affections, we must begin with a weaker strength in an ointment base and gradually increase the strength, commensurate with the slightest amount of irritation of the normal skin of the patient The stronger the preparation of salicylic acid and sulphur the quicker will be the recovery, provided one does not irritate too markedly the normal skin and produce a dermatitis

Many of the patients appear for treatment after they have used various irritating and ineffectual applications, and we may find more or less of a dermatitis, which might probably mask the real condition If acne rubra seborrheica is suspected soothing applications should be used until the latter affection becomes plainly evident, when mild applications of sulphur and salicylic acid can be ordered Our usual procedure, where no dermatitis accompanies the disease, is to begin with 20 grains of sulphur precipitate and 5 grains of salicylic acid to the ounce of cold cream This is gradually increased and continued until the disappearance of the disease No matter how mild the strength of the sulphur and salicylic acid, the patient will complain of its burning during the first applications

If there is marked tendency to flushing and congestion, which occurs in the older cases, the internal administration of ichthyol and strychnin assists in the control of the vessels Often mild applications of the Roentgen ray will hasten the disappearance of the lesions, and we believe it also assists in quieting the vessels to their proper tone

After the patient has recovered from the papular elements of the disease the underlying seborrhea should be treated to prevent its recurrence, and the patients should be instructed to continue the treatment of the seborrhea in a routine manner and add it to the routine of their toilet, as they do their tooth powder or manicure set For this purpose we generally use a solution of 1 per cent of salicylic acid with 3 per cent or boric acid in some spirit Accompanying this we often order the following powder, which is lightly rubbed over the face, after it has been thoroughly mopped with the abovementioned solution Acid boric, sulphur precipitate zinc oxid, pulv, calamin prep, equal parts Such a routine procedure when properly carried out, will almost always insure the patient against a relapse, and will markedly improve the oily seborrhea The scalp in every instance should be treated in the manner usually employed for such cases

PITYRIASIFORM SEBORRHEID OF THE FACE

We will mention only in outline another condition of the face which is in our experience rather frequent, and we believe should also be included with the so-called seborrheids as it is in every instance associated with a seborrheic condition of the scalp It is most frequent in those with fine, delicate skins, occurring, therefore, especially among women and children, and more frequently in blondes We see more cases in the winter months, and in those who have been recently exposed to sharp winds, being markedly frequent in women after automobiling

This disease occurs in the form of one or more scaly patches scattered over the front of the face and sides of the neck The patches are irregular in shape, ranging in size from the most minute point to an area often occupying more or less a quarter of the face surface, the usual size, however corresponds to that of a small coin There are very few if any inflammatory symptoms and the patch can only be seen in many instances on close inspection It is covered by fine closely adherent scales, giving it an appearance of a branny, desquamative character The edges are irregular in outline and the patches spread peripherally Often the patches are distinctly circular and are mistaken by the patient for ringworm When circular they have more of an inflammatory character and the edges are of a distinctly pale pink In the center of these patches the scales are adherent, and there is a yellowish, reduced parchment appearance to the whole area The patient will state that these patches are prone to recur and are aggravated by the slightest irritation

We have never seen this condition except on the face and neck, never on the hands or on the covered portions of the body Crocker refers to a similar condition and speaks of it as produced by soaps Sabouraud refers also to furfuraceous patches similar in character complicating streptococcic impetigo and says they are also due to that organism From a close study of these cases we feel assured that they have a direct connection with the so-called seborrheic element, and are most probably due to autoinfection from the scalp, occurring in those with dry, delicate skins, the exciting agents probably being cold winds, irritating soaps, harsh water, violent friction to the face and other traumata, followed by infection

We feel encouraged in making this statement when on looking over our records, we find that antiseborrheic treatment is the most valuable curative agent, though this has to be used in as strong doses as possible Often reducing agents will have to be pushed to marked exfoliation of the epidermis before the patches are eradicated It seems to us that chemical and mechanical agents, such as soaps, etc, are only the exciting factors, and that this condition must be due to some living agent following such trauma, as it does not undergo involution, but spreads peripherally, as other infectious processes It is only eradicated by the proper antiparasitic agents, which often have to be pushed to marked irritation of the normal skin and followed by soothing applications before a beneficial result is obtained To prevent recurrences the scalp conditions should be most thoroughly treated, and it is only by this method that repeated attacks can be controlled

These pityriasiform patches must not be confused with the usual seborrheic eczema with their yellow, greasy scales, or other acutely inflammatory conditions, because we have in this instance a furfuraceous patch, extremely superficial circumscribed, with the slightest possible evidences of inflammation, slightly itchy, rather rebellious to treatment, sensitive to the slightest irritation, without vesiculation or crust formation

DISCUSSION

DR. JOSEPH ZEISLER, Chicago, stated that he admired the classical observations in this paper, but questioned whether it is opportune to overload our dermatologic nomenclature still further In the one form of acne described we have simply a symbiosis of acne with seborrhea, in the second variety we have those familiar cases which were usually described under the term of eczema squamosum

DR JAY F SCHAMBERG, Philadelphia, said that for some years past he has seen, particularly during the spring months of the year, a considerable number of children with sharply defined, furfuraceous patches on the cheek which were recorded as cases of eczema squamosum He has long been suspicious, however that they are of a seborrheic nature The condition usually develops in March or April, he has observed as high as 10 per cent of the pupils in certain classes of certain schools to be affected with patches of this kind Whether the affection is the result of the harsh winds that usually prevail at this particular season, or whether it is transmitted from one child to another is a question which he is unable to answer It is, he said, very difficult to speak concretely on the subject of seborrheids, as we have not a very clear comprehension of what seborrheids really are, nor are we in accord as to the etiologic factors that have been described in connection with seborrheic processes Some years ago he examined the skin of fifty patients who came to the dermatologic clinic, for various reasons, and in 45 per cent of these cases, the sebaceous glands contained the microbacillus of Sabouraud Whether this organism bears any special pathogenic relationship to the class of eruptions under discussion future investigation must determine It has not been positively proved that the microbacillus is not a normal inhabitant of the sebaceous glands, although Sabouraud certainly makes out a strong case for its pathogenicity in relation to oily seborrhea

Dr W H Mook, St Louis, said, in regard to the pityriasic affections of the face and neck which are embraced under the second heading, he would insist that this is certainly a distinct condition from eczema, and should be so regarded The idea of his classification of this form of acne is to distinguish it from the other forms, as it is, in his opinion, a distinct entity

THE TECHNIC OF OPERATIONS FOR CARCINOMA OF THE BREAST *

MILES F PORTER, A M , M D
Surgeon to Hope Hospital, Professor of Surgery in the Indiana Medical College, Department of Medicine, Purdue University
FORT WAYNE, IND

The chief object of operation for cancer of the breast is, of course, the cure of the cancer This is as it should be, but it is also important that the convalescence of the patient be as comfortable and as rapid as possible, and that the resulting disability be as slight as consistent with radical removal of the growth It is especially with a view of aiding somewhat in the accomplishment of the last-named objects that this paper is written The chief basis of the paper—aside from a study of the literature—is my personal experience in this line of work, something over fifty cases of radical removal

SUPERFICIAL INCISION

This must be varied often to suit the case in hand, but the skin forming the floor of the axillary space should not be incised except in cases wherein the removal of a portion of it is necessary There are two reasons why it is desirable to avoid incising the skin in this area First because infection is more likely to follow incisions made in this area, and, second, because the resulting scar is likely to interfere with the movement of the arm

Figure 1 illustrates these points There was a slight infection of the wound in the apex which increased the amount of scar tissue and exaggerated the bridle which interferes with the upward movement of the arm Incisions so made as to form flaps with acute angles are objectionable, because they are difficult to coapt and are prone to slough on comparatively slight provocation Rectangular incisions for removal of the breast, as compared with circular or elliptical incisions are wasteful of tissue The incision which I think the best, and one which is adapted to most cases is one commencing at the humeral insertion of the pectoralis major muscle and following its lower border until the breast is reached, then surrounding the gland in a somewhat elliptical fashion so that when coapted the line of coaptation will occupy about the position occupied by the lower border of the normal pectoral muscle save that it extends farther inward and downward This incision gives ample room for the clearing of the axilla and the removal of the pectorals, and leaves a minimum scar, which may be fixed well up in front of the joint, where it will be least likely to interfere with abduction of the arm

Figure 2 shows the result after an incision of the kind described As stated above, the lines of the incision must of necessity be changed sometimes to meet the requirements of the case at hand, but the principle of so planning the incisions as to allow of coaptation with a minimum amount of tension made in a vertical direction, especially in the outer aspect of the wound, must be adhered to as nearly as is consistent with complete removal, if the best results are to be attained, so far as concerns the movement of the shoulder

PART TO BE REMOVED AND METHOD OF REMOVAL

All of the pectoralis major muscle, except the clavicular portion, and the abdominal portion when present, should be removed, together with the whole of the pectoralis minor, the axillary fat and glands, and the breast, with its coverings

The pectoral insertions are most quickly and safely divided by scissors, using the finger as a guide The cleaning of the axillary space should be from above downward and from without inward The larger part of this dissection can be most satisfactorily done by wiping the fat and gland away from the vessels I owe my knowledge of this gauze dissection to Dr A J Ochsner, and regard it as an important improvement in the technic By ligating the vessels near the main trunks, as advised by Jackson, the field may be kept free from blood and the work much expedited Clamps are placed, when necessary, on the distal ends of the vessels As the mammary gland is lifted from the chest wall the perforating arteries may be caught with forceps before they are divided

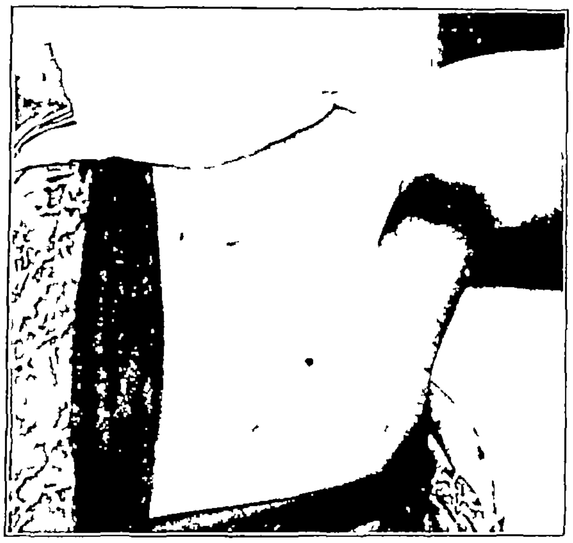
Fig 1 —Showing scar tissue in axillary space interfering with upward movement of arm

CLOSING AND DRESSING THE WOUND

The rapidity and completeness of the patient's recovery, as well as her comfort, depends, in a large measure, on the way the wound is closed and dressed The most perfect wound treatment is that which reduces to the minimum the scar tissue, and disposes that which is unavoidable in such manner as not to interfere with function With this object in view the wound should be completely closed and no drainage used In a very few cases, indeed, will it be impossible to secure com-

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* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City June 1907

plete coaptation of the margins of the wound, and in still fewer will drainage be necessary

Hemostasis must be practically perfect In accomplishing this, the use of hot compresses is invaluable These are applied to oozing surfaces while the larger vessels are being tied or twisted and the wound is being closed Not only does the heat assist in preventing the bleeding, but it is of material value in preventing the untoward results, pneumonia, shock, etc, which may follow the exposure of so large a raw surface to cold I have already said that in all but a very few cases complete coaptation of the margins of the wound can be secured In six patients operated on in Hope Hospital since October, 1905, complete closure of the wound has been secured in all In order to do this, the skin must be drawn taut over a larger or smaller area, but the skin will stand much more tension without breaking down than most operators seem to think In most of these cases in which the wound is completely closed, the skin will have to be stretched until it is white, but by placing tension sutures properly, and in sufficient number so as to distribute the tension as evenly as possible, no harm will come from the tension, and the wound will heal by first intention within a week For tension sutures I prefer silk-worm gut and buttons The buttons have a tendency to produce pressure necrosis if the tension is great, but this can be so nearly overcome, by placing under the buttons a little gauze, that it amounts to but very slight annoyance at most

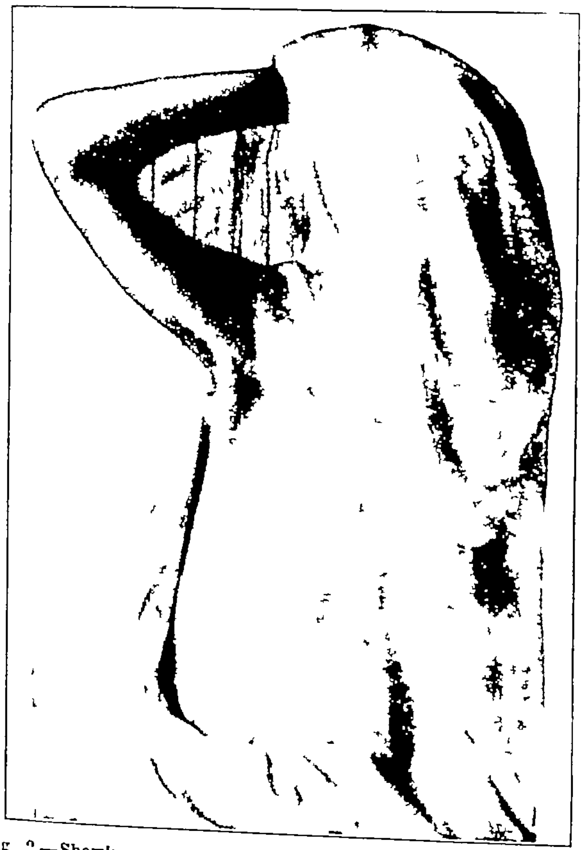
Fig 2—Showing scar following incision recommended by author

Figure 3 is from a photograph, taken before operation of a case of recurrent adenocarcinoma of the left breast One can see from the picture how extensive a removal of the skin must have been necessary in this case and yet, following the method described, complete closure of the wound was secured and the wound was found to be completely healed when the dressing was changed on the seventh day after the operation

Figure 4 is from a photograph of this patient taken seven days after operation, the wound is healed, and the hand can be placed on the head Equally good results, as to wound closure and movement of the arm, were obtained in the case of a Mrs H, in which, in addition to the removal of the tissues ordinarily removed, the floor of the axillary space, the fascia of the serratus magnus, and subscapularis, and the edge of the latissimus dorsi were removed, together with the supraclavicular glands These latter were removed through an incision above the clavicle

With the tension sutures properly placed, the edges of the wound can be brought together without marginal tension In coaptation, adhesive straps are of much value Indeed, the coaptation of the margins of the wound is, for the most part, accomplished by adhesive straps, aided not infrequently by subcuticular sutures of catgut, and, in rare cases, a few through-and-through sutures are used

Of no less importance than the coaptation of the margins of the wound is the coaptation of the skin to the underlying surface If this part of the coaptation is perfect, there will be little likelihood of subsequent trouble from lack of motion in the shoulder or from venous stasis, except, of course, the stasis due to compression of the vein by recurrence of the carcinoma Lymphatic edema will occur in a small percentage of cases as a direct result of the operation, owing to the cutting off of the communication between the lymph vessels of the arm and those of the neck, and, under these circumstances, is rather an indication of a complete operation than otherwise Edema of this kind usually manifests itself soon after the operation, and is usually at most a source of some inconvenience The point is that we have removed the anterior wall, together with the cellular and glandular contents of the axilla, and to secure subsequent freedom of movement of the shoulder nothing more nor less is necessary than to apply the skin flaps accurately to the remaining walls and secure their union without infection Of especial importance is it to secure coaptation of the skin and underlying cellular tissue to the apex of the axilla Failing in this, there will be formed a smaller or larger wedge of connective tissue in the apex of the axilla closely adherent on all sides, or a bridle will be formed

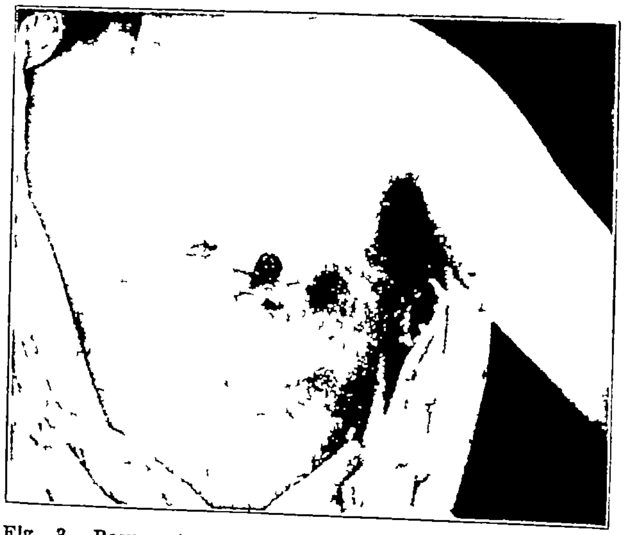
Fig 3—Recurrent adenocarcinoma before operation, showing how much tissue it was necessary to remove

at some distance below the joint and firmly attached to both inner and outer axillary walls The natural result of either condition will be inability to raise the arm and more or less interference with the return of blood from the arm To secure the opposition necessary to prevent those untoward results, I relied on a snug application of the external dressings until something less than a year ago, but it was found not infrequently, that they were too tight for comfort and produced considerable swelling of the arm forearm and hand To overcome this difficulty, I conceived the idea of using subcuticular stitches of catgut to secure the apposition necessary, and have used them in six cases with perfectly satisfactory results in all save one, which is shown in Figure 1 In this case, the incision is faulty, but, notwithstanding this a proper placement of the stitches would have prevented the inhibition of movement which is present (The arm can not be raised higher than it appears in the picture) The line of incision in the skin should have been fixed well up in front of the joint Two or three stitches are usually sufficient

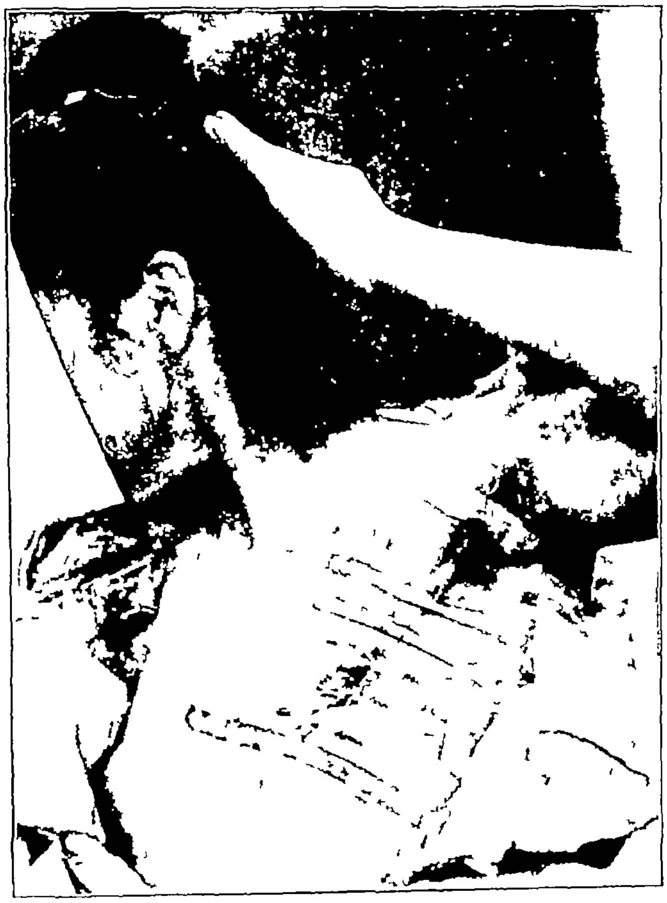
Fig 4—Recurrent adenocarcinoma seven days after operation showing degree of freedom of movement in arm

I described this method to several of my friends and requested them to try it and I would be glad to hear of their results The advantages of this technical device over others whose object is the same are

1 The certainty of the good results
2 The comfort it secures to the patient
3 Its simplicity and ease of execution and
4 More rapid recovery of usefulness of the arm

Figure 5 is from a photograph taken fourteen days after operation The wound area in these cases is so large that with the most perfect hemostasis practicable there will be enough oozing to cause considerable accumulation of blood under the flaps while the margins are being coapted unless measures are taken to prevent it The use of hot compresses has already been referred to, but I wish here to speak of their use more particularly As soon as the axillary space is cleared, a hot compress is placed in it and held snugly by an assistant while the removal of the parts is being completed and the same thing is done with the remaining wound area as soon as it is cleared The aim is to keep these compresses applied as continuously and as long as is consistent with the reasonably rapid completion of the work The one in the axilla is not disturbed until one is ready to place the sutures that anchor the skin in the apex, and only just enough to permit this to be done The margins are sutured over the compress until its lower margin is reached when it is withdrawn During the suturing and after the withdrawal of the compress, an assistant is directed to keep the flaps closely applied to the underlying compress and chest wall, respectively The compresses in the lower and inner aspect of the wound are removed for the placing of the tension sutures Before the last stitches are tightened, the flaps are methodically compressed toward the opening to remove any blood that may have accumulated, the stitches are tightened, the adhesive straps placed, and the dressing put on Care should be taken to apply this so that it will hold the raw surfaces snugly in apposition The arm is carried in a sling for a week when the patient is allowed to use it with caution for another week after which she is allowed to use it as she pleases

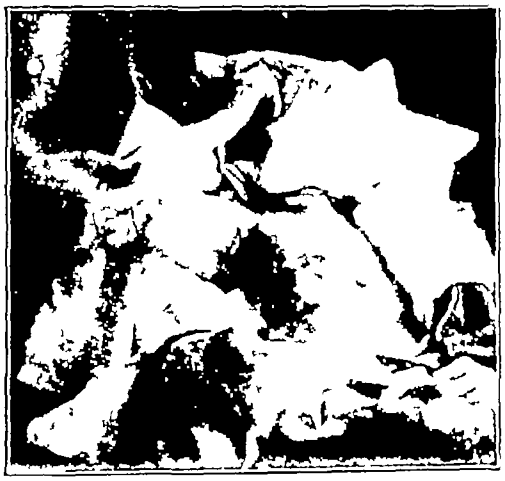
Fig 5—Showing result of using subcuticular stitches of catgut Fourteen days after operation Hand can be raised to head

The first dressing is allowed to remain undisturbed for a week, when it is taken off and another applied for a week longer, when no further dressing is needed unless it be a few layers of gauze to protect the tender surfaces The patient is put to bed, with the head and trunk well raised, and is allowed to assume the full sitting posture as soon as she will Patients are usually walking about by or before the end of the week

CONCLUSIONS

In conclusion permit me to emphasize the following points

1 Complete closure of the wound after removal of cancer of the breast may be secured and drainage dispensed with in nearly all cases if proper attention be paid to the placing of the incisions the securing of hemostasis and the use of tension sutures

2 Venous stasis in the arm and lack of motion in the shoulder as postoperative results may be avoided in nearly all cases by avoiding infection and keeping the wound surfaces in close apposition until healing is complete

3 The best means of accomplishing the last-named object is a few buried sutures in the apex of the axilla and a properly adjusted compressive dressing held in place by adhesive plaster

DISCUSSION

Dr **William L Rodman**, Philadelphia, agreed with Dr Porter as to the necessity of the free removal of the overlying skin, even in such cases as show that we can not get primary union He inclined to the belief that possibly the greatest mistake that is made in practice generally is to subordinate the probabilities of a radical cure to securing primary union in every case He said that we should keep constantly before us that Gross and Pancoast and the older surgeons reached 10 and 15 per cent of cures, but only by very freely removing the skin A complete axillary dissection was never done, and muscles were not destroyed Whatever good was in these operations must have been in the free removal of skin Therefore, he thinks that we should not accentuate the necessity for getting primary union, even in a majority of the cases It is all very well if it can be done and without making too much tension, and this, he said, can be done, as Dr Porter says, by undermining the skin, or by skin grafting, which can always be resorted to to cover in any defect that may exist

Dr Rodman has done the operation according to the method described by Dr Porter a number of times, and he has also advocated strongly the operation of Warren, which is practically the same He liked it very much and thought it the best operation he knew, inasmuch as it has generally made primary union possible, but he has found in a number of cases a bridle of skin which fetters and prevents the uplifting of the arm beyond that extent, thus interfering with the doing up of the back hair, etc. While Dr Rodman still believes that that operation is one of distinct value, he has obtained recently a better result from the operation of Jackson, and prefers to place the incision in that way He believes that it is a mistake to cut on to the arm, or, at least, to go low down on the arm

Dr Rodman emphasized the necessity of removing the muscles in every case of cancer of the breast, although he was not prepared to say that the muscles will be involved Researches have demonstrated that the fascia of the muscles usually will stop limitations of the growth, but recent anatomic discoveries show that Halsted built better than he knew when he insisted on the removal of the muscles in every case For, in the first place, a complete axillary dissection can not be made with the muscles *in situ* and Gross and Pancoast demonstrated that occasionally there will be lymph glands which can not be felt with the muscles in position Therefore, it is necessary to remove the muscles in every case, otherwise the operation is incomplete

As to drainage, Dr Rodman admitted that in the majority of instances the wound *can* be closed without drainage, and yet it certainly is the custom of American surgeons to drain after amputations of the breast In preparing a paper on this subject some time ago, he wrote to fifty American surgeons, and of the twenty one who replied, there were three who did not use drainage. Certainly drainage is not necessary in case of a small breast particularly, but Dr Rodman believes that, as a rule, it is just as well to drain

Speaking of the necessity of invading the neck, Dr Rodman stated that he is satisfied that we do not invade the neck as often as we should Recent anatomic investigations show that if the tumor is located superiorly, in the upper hemisphere of the breast, it is drained by the lymphatics which pass from the clavicle into the glands above the clavicle and not directly into the axilla Therefore, in the case of tumors that are situated superiorly, it is unnecessary to enter the neck in every case

Dr. **Miles F Porter**, Ft Wayne, Ind, was very glad indeed that Dr Rodman emphasized the necessity of *not* sacrificing the chance of a perfect recovery for the sake of securing primary union In the case he reported the breasts were removed as widely as any one removes them, and yet, in the majority of cases, union was achieved Dr Porter invades the neck when it is the proper thing to do As to drainage, he said that it is never too late to mend The sooner those who make it a rule to drain, make it a rule not to drain, the better

PLASTIC RADIOGRAPHY

A PRELIMINARY COMMUNICATION

WALTER G STERN, M.D., AND I ROSENBERG, M.D

CLEVELAND, OHIO

Radiographs, usually spoken of as skiagraphs, are not, as the latter name would imply, mere shadowgraphs or silhouettes, they are rather the result of the superimposition of semishadows or half-tones as they are called in photography whose size shape and intensity depend on the size, shape and molecular density of the object to be radiographed But such pictures have never been interpreted as perspectives or "plastic" reproductions, and successful attempts have never been made to obtain 'relief' effects except by means of stereoscopic reproductions

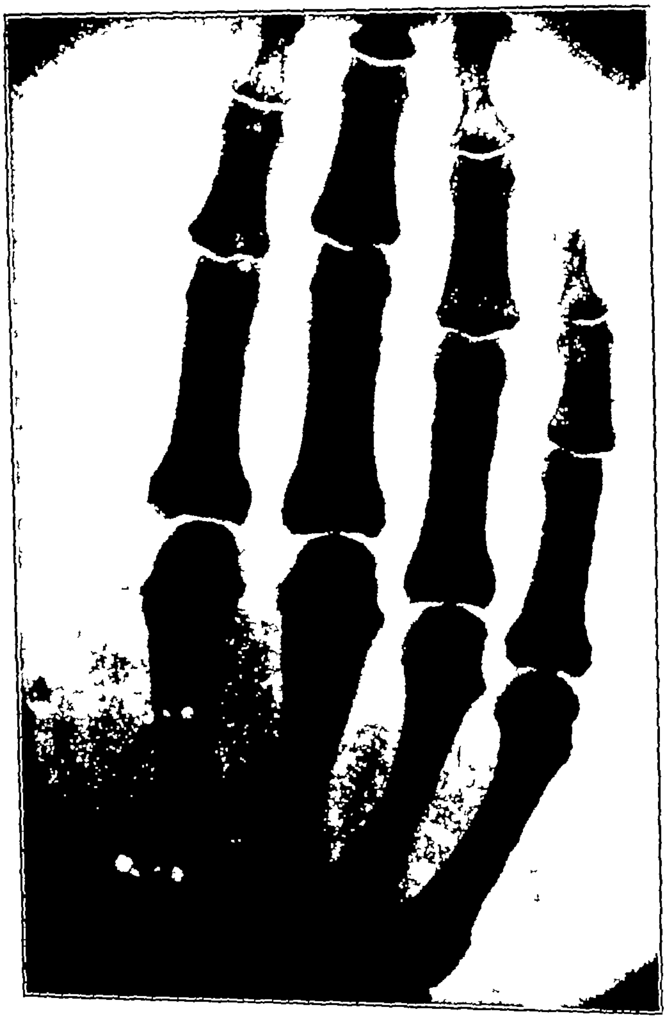

Fig 1—A 'plastic radiogram showing distinct shadow of soft parts with high lights and shadows of the bones giving relief effects Print on bromid paper direct from the combination of the negative and positive

Bela Alexander, a country practitioner hitherto unknown living in an obscure part of Hungary, first published[1] a method of obtaining "plastic x-ray" photographs It is through the efforts of one of us (Rosenberg) that the substance of this and other contributions of Alexander and other Hungarian writers in the various Hungarian medical journals has been collected and abstracted The method as they give it is long and tedious, full of archaisms and omissions of most important details such as the time and methods of exposure, copying, registering printing, etc We have tried many methods, always rejecting anything which could smack of "dodging" (as the professional photographer would say) and are now ready to report the following provisional modification of Alexaander's method [2]

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[1] Orvosegyesület March 10 1906

A careful exposure is made with two tubes on a specially prepared double coated x-ray plate This plate is coated so that the slower emulsion is on top, and was made for this process, together with the plate for the positive (No 2) by the Lumiere Company

The first tube used for the double exposure is a very soft one, and without changing in the least the relations between the tube and the object and the object and the plate a second exposure is given with a hard tube This change of tubes is easiest done by using a compression diaphragm apparatus of the Albers-Schoenberg or Freiberg type, in which latter the tube holder is a separate piece and has two sights for centering the tube My own apparatus has a shallow wooden cup accurately centered over the diaphragm for receiving the tube, thus in using tubes of the same size the target will always fall approximately in the same place [3] Neither the object nor the plate dare be disturbed in the least during this change Although the European writers claim to have had great difficulty in determining the relative lengths of the exposure to the various tubes we have found that for very soft tubes followed by medium hard ones the relative exposure will be about as 5 to 1 That is, if with a certain current one would ordinarily expose, say, a hand twelve seconds, then for "plastic" work the first exposure should be ten seconds and the second two Of course no hard and fast rules can be drawn

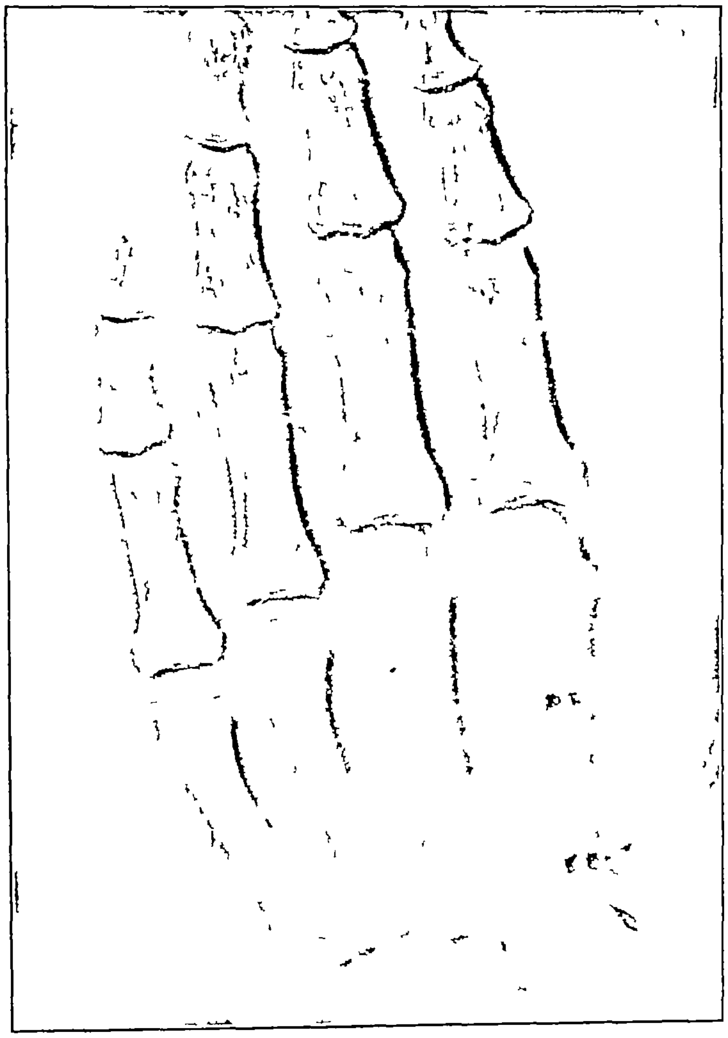

Fig 2—Ordinary radiogram of same hand as shown in Figure 1 made with a moderately soft tube exposure 12 seconds Note flatness and weak shadow of soft parts

The plate is then developed in the usual manner and must be quite dense and contrasty, if the exposures have been correctly timed "plastic" effects will already be observed in this plate, which is, of course, the negative (No 1) After the negative has been dried, a positive (No 2) is to be made by direct contact in a printing frame, using a slow plate on the order of a lantern slide plate The positive must be equal in density and contrast to the negative

The plates are now placed back to back and accurately registered This is best done by scratching on the negative before making the positive a short fine vertical line in the center of the upper edge of the plate and two short fine horizontal lines, one each in the lower right and left-hand corners These fine scratches on the negative will, of course, be reproduced on the positive by corresponding fine black lines If the plates thus marked are placed back to back and held together by light spring clamps and examined in a strong light sending out parallel rays—an automobile gas lamp, for instance—they can easily be moved one over the other until these fine lines are found to overlap accurately The plates are now properly centered and are permanently bound together with passe partout binding paper

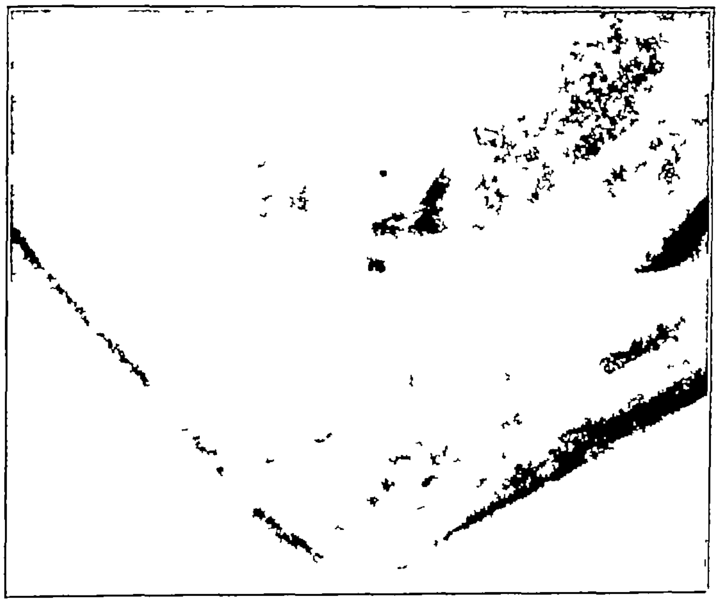

Fig 3—Plastic radiograph of a fractured elbow showing stereoscopic projection of the internal condyle Picture was taken with the internal condyle and ulna nearest the plate The picture shows best if held three feet away and two feet below the level of the eyes

A print must now be made with the paper in contact with the positive plate, and for this purpose we advise the use of bromid paper, as it alone has the requisite speed to take the place of the Plates 3 and 4 of Alexander's method The printing of No 3, the "plastic," can only be done with parallel rays of light which must strike the plates at an oblique angle Ordinary light is of course out of the question on account of non-parallelism of the rays dispersion and reflection For this purpose we use the aforementioned automobile gas lamp at a distance of from ten to twenty feet The plate holder stands at an angle of about 45 degrees to the plane of the lamp thus giving very oblique illumination The distance from the light to the plate does away with any possible unequal illumination, for the nearer edge of the plate necessarily receives more light than the more distant one The "plastic" illustrating this article (Fig 1) was exposed fifteen minutes on bromid paper

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[2] Alexander makes use of four plates before his final print can be obtained We have shortened the method and use only two

[3] By using a Mueller tube No 16 for hard and soft rays one can obviate the use of two different tubes as this tube No 16 is constructed in such a manner that by changing the connecting wires to different cathodes one can get soft or hard rays at will

When developed the print (No 3) will show beautiful "plastic" effects and the soft parts usually stand out in wonderful clearness The more perfect the first negative—Plate No 1—the better the "plastic"

How does this "plastic" result from the double exposure and the combination of the negatives? We do not know According to the law and the prophets the combination of an equally dense and perfectly centered negative and positive should result in an absolute blank, as the opacities in the one and the transparent parts of the other should counterbalance

How does the "plastic" differ from the ordinary skiagram? As previously stated, the "plastic" does not consist merely of the overlapping of half-tones of different intensity, but contains "shadows and high lights"—the two light values which make an ordinary photograph or drawing stand out in relief

Are the effects mere photograph dodges? So the skeptics have claimed, and at first sight we were inclined to the belief that they were mere artifacts But one by one the skeptics have been silenced and have joined the ranks of the believers until even Schellenberg, the earliest and firmest opponent, has been converted and forced to admit the "plastic" radiography to the greatest advance since Roentgen

As for the theories and rationale of "shadowgraphs and plastics" and the explanation of the various phenomena involved in their production, we are not yet able to speak from conviction It has taken most of our time to perfect the details, and we shall give at another time and in a more suitable place an explanation of the various principles involved

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A SIMPLE AND SAFE OPERATION ON THE FRONTAL SINUS BY THE INTRA-NASAL ROUTE

R H GOOD, M.S, M.D
CHICAGO

The instruments used in this operation are two frontal sinus rasps, two tapering curved chisels and three protectors

The frontal sinus rasp (Fig 1) is made on the same principle as the old-fashioned coarse horseshoe rasp, from which I derived the idea It is slightly curved at the rasp end to fit into the frontal sinus and the teeth are on the longitudinally concave surface, pointing toward the handle, so that when traction is made on the rasp, the bone anterior to it is rasped away, as illustrated in Figure 5 The posterior surface of the rasp is perfectly smooth and flat

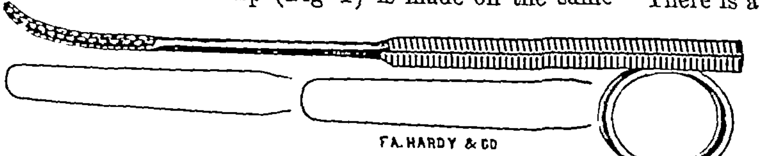

Fig 1—Frontal sinus rasp, showing in outline exact length and width of rasp

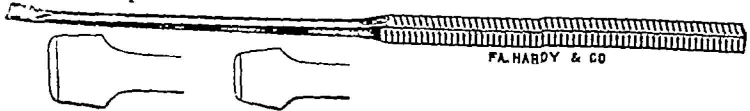

Fig 2—Chisel, showing in outline exact size

The chisels (Fig 2) are short, curved and tapering The handle at the chisel end is very slender so that the chisel can be manipulated under the direct vision of the eye The edges are tapering as well as blunt, so that if the edge should strike a bony surface it would tend to glide off instead of penetrating

The protectors (Fig 3) are made of brass and in three different widths as illustrated They can be bent easily into shape on the flat, but not sideways

I have performed these operations under local anesthesia The cocain crystals are rubbed into the mucous membrane with a cotton swab on an applicator which is first moistened with adrenalin chlorid 1 to 1,000, and then dipped into the cocain crystals The entire olfactory region as well as the bulla ethmoidalis and unciform plate are thus anesthetized The middle turbinate is then removed by the ordinary methods and the processus uncinatus of the ethmoid bone is removed with the larger chisel

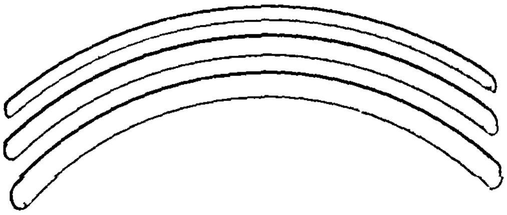

Fig 3—Frontal sinus protectors

A frontal sinus catheter, with syringe attachment, is then inserted into the frontal sinus and a half dram of a 10 per cent solution of cocain in adrenalin 1 to 1,000 is injected into the sinus A pledget of cotton is placed over the infundibulum for a few minutes to take up the cocain as it returns from the sinus The largest possible protector is now inserted into the frontal sinus, and if the smallest protector will not enter, which is rare, a good-sized probe is used, until later in the operation when the protectors can be inserted

Having the protector or probe as the case may be, *in situ,* the larger chisel is placed in position as illustrated in Figure 4, and a part of the processus frontalis of the superior maxillary bone, as well as a part of the spina frontalis of the frontal bone, and the anterior medial wall of the labyrinthus ethmoidalis are chiseled through and removed with forceps or curettes

The chisel must always be kept in direct line with the protector so that the tabula interna is not endangered There is a considerable space between the spina frontalis and the tabula interna of the frontal bone and the operator can almost always chisel without touching the protector, for the moment the chisel has chipped off a piece of bone it has to pass through a space before it encounters the protector, and the hand nearly always will stop the chisel before it touches the protector, and in case it does strike the protector, the hand has reduced the force to such an extent as to make hardly a mark on the protector

As stated above, the edges of the chisel are dull and tapering, so that if the edge should touch the lamina papyracea of the ethmoid bone or the tabula interna of the frontal bone, it will slide off and by the time the chisel has traveled through the space of about half an inch, under proper care, would not have enough force to penetrate even if the edges were sharp

The anterior ethmoidal cells are removed with forceps or curette, and by this time the frontal sinus rasp may be introduced into the sinus and if not the smaller chisel is used to make the opening a little larger. When using the small chisel high up I put in two protectors at a little different angle to insure still better protection.

The structures to be guarded against injury are the lachrymal bone, lamina papyracea, and the inner lower floor of the frontal sinus. By keeping a prepared skull in front of you while operating it is almost impossible to penetrate these structures, but an assistant can put his finger into the orbit and can tell at once whether the chisel is lifting the orbital periosteum. The lamina cribrosa is not in danger because the chisel is directed outward and not in the direction of this structure. The tabula interna is protected first by the protectors, and second by the fact that the chisel has to go through a space before touching it, and being carefully held by the hand loses its momentum by the time it reaches this structure.

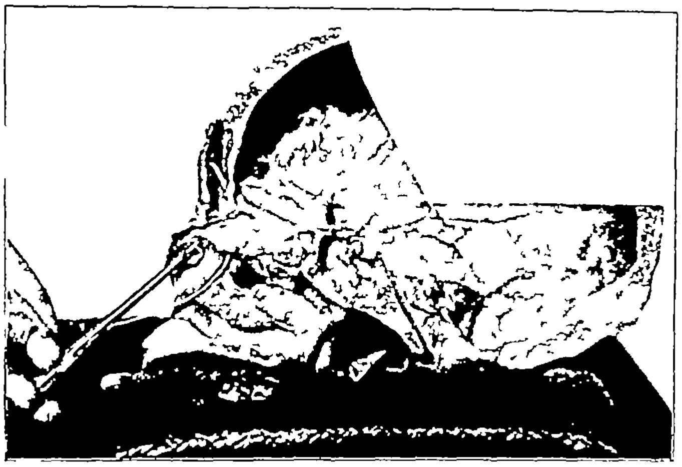

Fig. 4.—Showing chisel and protector in position.

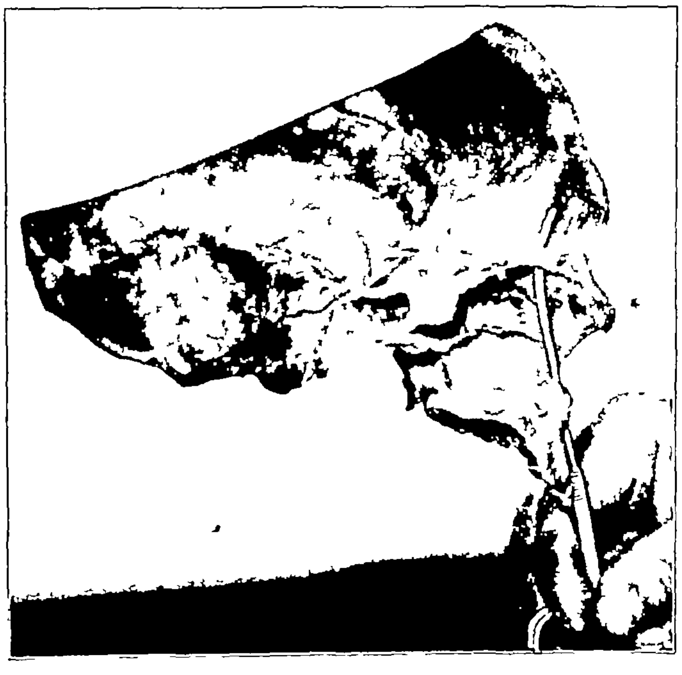

Fig. 5.—Frontal sinus rasp in position.

The frontal sinus rasp is now easily introduced, as illustrated in Figure 5. With this instrument the spina frontalis is rasped out, as well as the frontal accessory ethmoidal cells, if present (Fig. 6). There is absolutely no danger to the intracranial structures, and the worst thing that could happen would be to rasp through the orbital wall, but this can be avoided by an assistant putting his finger into the orbit.

The rasp must not be directed directly forward, but outward and forward, and care must be taken not to withdraw the rasp too far, as it will damage the septum and cause synechia between it and outer wall, as occurred in one of my cases, which was, however, easily remedied. The sinus is then curetted with flexible curettes and diseased membrane removed. The reaction following this operation is very slight, and patients who have been suffering pain for several weeks will sleep with comfort the first night after the operation.

The sinus is packed with sterile gauze, soaked in carbolized petrolatum, to which has been added a few drops of oil of cloves. In twenty-four hours the packing is removed, and after that the patient is left absolutely alone, except that care should be taken that no adhesions form between the septum and the outer wall; if granulations form, cauterize them with silver nitrate.

I believe that my frontal sinus rasp would make a valuable addition to Dr. Ingal's method of making an opening into the sinus with a burr, as the rasp would fit into the opening which his burr drills out, and thus the opening could be enlarged three or four times. I feel that my chisels are less dangerous than the drill.

I have had the pleasure of seeing some of Dr. Halle's patients operated on by his drill method, and he makes a good large opening. I, however, consider my method much simpler, requiring but a cheap instrumentarium, and the operation can be done in a much shorter time. My experience with drills run by motor power is that it is more or less difficult to keep them absolutely under control, whereas my rasp can be used without any danger whatever to the intracranial structures.

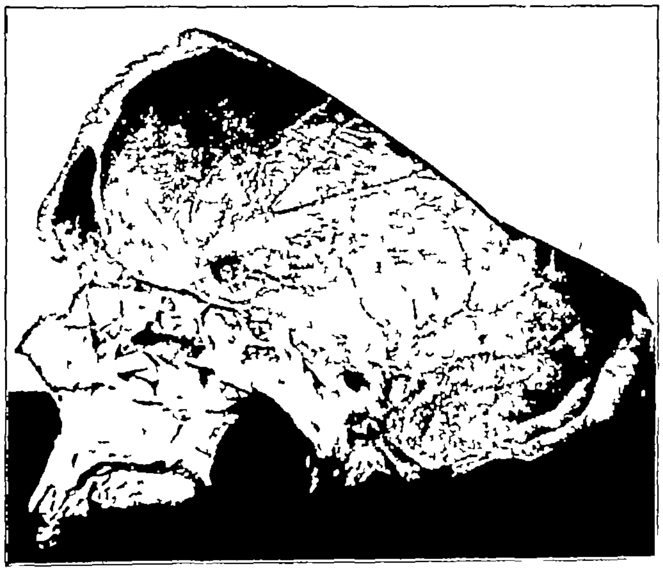

Fig. 6.—Showing size of opening when operation is completed. The ethmoid cells are all removed in this preparation.

I believe that with this method a large majority of the frontal sinusitis cases can be cured without resort to the external disfiguring operation. This operation should be done in all cases where an external operation is indicated, as it does no harm and is of great assistance in diagnosing cholesteatoma or tumors in the sinus, and should an external operation be necessary, a good drainage has already been established of larger size than is ordinarily made when doing the external operation.

Cool Temperature Checks Mosquito Biting.—Dr. Carlos J. Finlay, chief sanitary officer of Havana province, thinks that in Havana a daily mean temperature below 23 C. (73.4 F.) does not allow the stegomyia to bite and suck blood.

THE CLASS METHOD OF TREATING CONSUMPTION IN THE HOMES OF THE POOR *

JOSEPH H PRATT, M D
Physician to Out Patients Massachusetts General Hospital
BOSTON

In the great out-patient department of the Massachusetts General Hospital several hundred consumptives seek advice and treatment every year In my own clinic in that institution I have frequently seen two or three new cases in a single morning In some of the favorable ones the patients are able to enter the state sanatorium at Rutland But there are many more who have families depending on their weekly wages and no money in the bank These are often fairly healthy looking men and women who say all they need is some medicine to stop the cough or a good tonic to brace them up Others too ill to work and yet with a good fighting chance for recovery under sanatorium treatment can not pay even the small weekly charge at Rutland There is still another group eager to get well willing to spend their scanty savings if their life can be saved and sometimes with kind friends and relatives who are willing to lend them money who are refused admission to the sanatorium because the disease is too far advanced

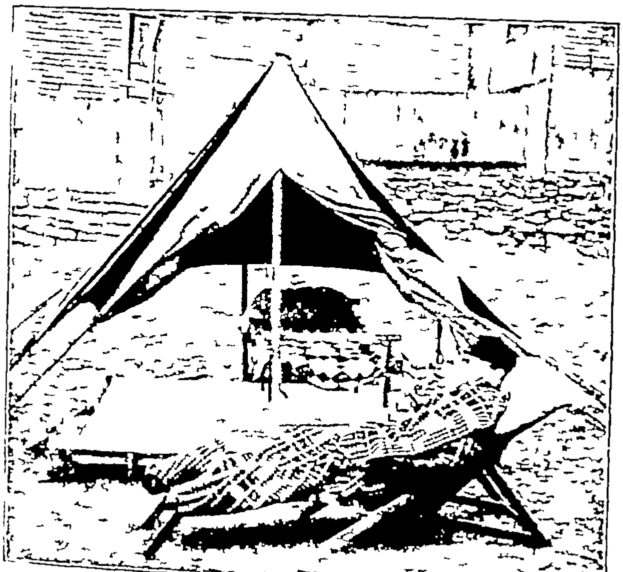

Fig 1 —Tent converted into canopy by fastening up the sides and ends Photograph shows proper position of patient in reclining chair

One day I found among the new patients two sisters sitting side by side in the examining room The elder presented the typical picture of advanced phthisis In the other girl the disease was just beginning I called the younger sister aside and explained the nature of her illness but assured her that if she went to Rutland for a few months in all probability she would recover If she continued to work I said the disease would surely progress and her life would be the penalty I told her frankly that her sister's lungs were so extensively diseased that I could not hold out to her any hope of cure

She paused a few minutes before speaking and then told her story Her parents were old and feeble and entirely dependent on her scanty earnings With no outward sign of the inward struggle she quickly made her final decision and said "Before there was sister and I to work for father and mother now I am the only one I can not leave them "

There was no answer I could make They left the room and I have never seen them since Doubtless there were many people who would have been glad to help this unfortunate family, but I did not know where to find them and there was no organization to which application could be made as they lived beyond the city limits and could not look for help to the Boston Society for the Relief and Control of Tuberculosis or to the Associated Charities Furthermore this unhappily was no isolated case Every physician working in a large dispensary has had similar experiences Thousands of men and women make this same renunciation A few months of treatment would have restored the girl to health Yet to meet the conditions in that family home treatment not sanatorium treatment, was indicated The problem, as in this case is often more complex than providing free treatment in sanatoria There was the family to be supported and the sick sister needed nursing and medical attention

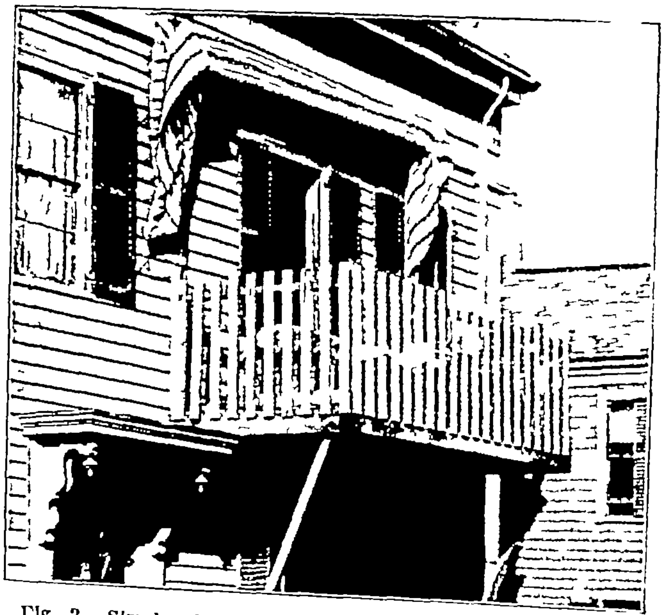

Fig 2 —Simple platform erected where neither yard nor roof were available Total cost $11 50 The patient for whom it was built had advanced tuberculosis He spent most of the day on this platform and slept here every night for a year He gained sixty pounds in weight while in the class

Thanks to the Rev Elwood Worcester, the rector of Emmanuel Church, such tragedies are fortunately a thing of the past at the Massachusetts General Hospital If the two sisters had come to the same clinic a year later they would have been referred to the Emmanuel Church Tuberculosis Class and I could have assured the younger sister that those in charge of the class would find some way to solve the financial difficulties so that she could give up her work and take the rest treatment at home She would have also been told that the results obtained in the class even with advanced cases had been so encouraging that some hope of recovery might be held out to her sister The two girls would have gone home cheered and hopeful

On the following day the friendly visitor would have called and explained to them and the rest of the family more about the class the nature of the disease, the manner of its spread, the methods of disinfection, and how to get well by taking the treatment Plans would have been made at once for erecting a balcony so that both

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* Read at the Third Annual Meeting of the National Association for the Study and Prevention of Tuberculosis Washington D C May 6 1907

girls could sleep out of doors The friendly visitor would have begun at once the search for a housekeeper if the mother was found to be too feeble to do the work properly and to care for the sick ones The financial problem would have been attacked at the same time The employer of the sick girl would have been visited and his aid solicited, the friendly visitor would have called on the priest or minister and I am sure that his aid would have been secured, for we have never yet appealed in vain to Protestant, Catholic or Jewish organizations or to charitable or fraternal societies If all other channels of relief were closed, and if a volunteer visitor of the class were unable to secure loans or gifts, then the actual necessities of the family would have been paid out of the class treasury until the girl was able to work again

What the Emmanuel Church Tuberculosis Class has been to its members and what happiness it has brought into their lives is indicated by the numerous letters sent by its members who are now working, after years of illness and inactivity The class was organized in July, 1905 In an article published in *The Journal of the Outdoor Life* the following September the plan of treating poor consumptives by sanatoria methods in their own homes was outlined The first report was published February, 1906, in the *Boston Medical and Surgical Journal* and the class method explained more fully Recently a report was issued by Dr Hawes and Dr Floyd of the work done in the Suburban Tuberculosis Class which was formed in January, 1906 This organization is designed for those consumptives who live too far from the city to be visited by the paid nurse of the Emmanuel Church Tuberculosis Class In the suburban class the visiting is done by volunteers in the various towns and cities where the members live

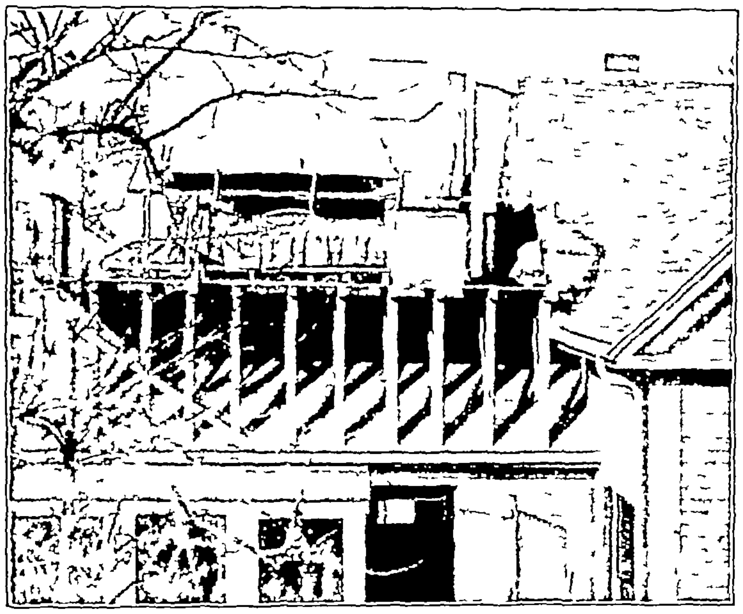

Fig 3 —Platform and tent erected on pitch roof

The admirable paper of Hawes and Floyd describes in detail the class system It is important that the class should be small as the doctor and the friendly visitor must establish close personal relations with each member In the Emmanuel Church Tuberculosis Class the limit of membership is twenty-five For the greater part of the time we have had from fifteen to twenty members If more than twenty-five consumptives are to be treated an additional class should be formed, as the work can be carried on most effectively in small units

In April 1906, money was offered by ladies outside of Emmanuel parish for extending the work Instead of increasing our membership, a separate class was organized Each class has its own directing physician and a paid friendly visitor who devotes practically her entire time to the work Nearly all of the members have been referred from the Massachusetts General Hospital The cases taken into the class were those patients to whom other avenues of escape were closed Either they were too poor or the disease was too far advanced for them to gain admission to the state sanatorium Three advanced cases, rejected as unfavorable by the examining physician for Rutland, have recovered from the disease in our class and have been allowed to return to their work

Our first member is now the friendly visitor in the Arlington Street Church Tuberculosis Class, which she has served faithfully and satisfactorily since its organization in April, 1906 I take pleasure in reporting that she insisted on using her first savings to repay the Emmanuel Church Tuberculosis Class the money loaned in her sickness and need Our second member, who had had a cough for five years, has completely recovered He is a painter by trade and has not lost a day's work from illness since he graduated from the class a year ago this spring and has not lost in weight, and this in spite of the fact that he has been doing inside painting The third member, whose case was described in detail in my first report, has been working over a year Through the generosity of a lady of the congregation of Emmanuel Church a little tailor shop was provided for him on River street. During the spring and summer he worked with the door and window always open so that he might still get fresh air while at his trade He has not lost an ounce of the forty pounds he gained in the class and, although he works eight or ten hours a day, he looks the picture of health

In all, fifty-two consumptives have been admitted to the class since it was started nearly two years ago The membership is confined to those in whom the clinical diagnosis has been confirmed either by finding tubercle bacilli in the sputum or by a positive tuberculin test Deducting fifteen, the number of present members, thirty-seven are left Thirteen of these were in the third stage of the disease (far advanced tuberculosis) Three in this group have recovered and are now at work Seven have died Four of them were on the roll of the class at the time of their death Two of the remaining three were discharged for not conforming with the rules and one is now too ill to attend the class There were fifteen moderately advanced cases Of these one patient was sent to Rutland in an improved condition, two left the class because they considered themselves well, although the disease was not arrested and the danger of returning to work was fully explained One of these had gained twenty-one and a quarter pounds and the other ten and one-half pounds in a single month These two are the only ones that have withdrawn from the class

Another in the group of moderately advanced cases was unable to continue treatment on account of chronic joint disease (arthritis deformans) The remaining nine patients (60 per cent) of the fifteen moderately advanced cases left the class with the disease arrested In five of these the disease was apparently cured We had in this series nine incipient cases and in seven of the patients the disease was apparently cured and in the other two the disease was arrested In other words, 75 per cent of the patients out of the twenty-four incipient and moderately advanced cases recovered No one is graduated until the disease is arrested and the member able, in the opinion of the physician in charge, to return to work Seventeen of our members have fulfilled these requirements and have graduated Their average gain in weight was 25 2 pounds The greatest gain was sixty pounds This record is held by a negro, whose weight had fallen from 200 to 146 pounds during his two years' illness Eight have been at work twenty weeks or over and in none has the disease recurred

EXPENSES

The expenses of the class from July 1, 1905, to May 1, 1907, were about $2,000 A little more than $200 was contributed by friends outside of Emmanuel parish and by the patients themselves The remaining $1,800 was furnished by the church If the value of a life during the productive years be fixed at $2,000 and the cost of a two years' sickness, which is about the average duration of a fatal case of consumption, be placed at $1,000, this would mean that Emmanuel Church, by saving the lives of seventeen persons, has saved $54,000 by an expenditure of $2,000 Six of the seventeen were married men with families depending on them, and five were the mothers of little children Emmanuel Church has furnished the facilities for leading the out-of-door life, such as tents, cots, reclining chairs, and blankets Medical care and nursing have been furnished free Drs J B Hawes, C Floyd and N K Wood have been associated with me and gave their services The zeal and tireless labor of the friendly visitor, Mrs Elsie L Oreon, has been the chief cause of our success

The families of our members have been taught to help themselves Sometimes they have been able to let rooms In several instances we have boarded one of our members in the family of another This is an admirable arrangement, because this money paid out for board gives a little available cash each week for a needy family, and thus two members are helped

The four chief factors in the success of the class have been 1, The patients have spent the nights as well as the days out of doors, 2, they have been kept at rest in the recumbent position, not only until their temperature is normal, but until the symptoms of active disease have disappeared, 3, the system of daily records devised by Dr C L Minor, 4, the weekly meeting Implicit obedience of the rules and regulations has been demanded

FRESH AIR DAY AND NIGHT

The importance of Dr Millet's discovery of the value of sleeping out of doors, even in a harsh climate, in the treatment of consumption can scarcely be overestimated If any one thinks it is the same thing to sleep in a room with the windows open as to sleep out of doors, personal experience will soon convince him of his mistake All of our members are required to sleep in the open air This has proved no hardship even in winter Plenty of blankets and warm clothing keep them comfortable They frequently tell of the pleasure they find in sleeping out of doors, and some declare they will never sleep in a room again If the house of the candidate for membership offers him no opportunity for living out of doors, then he must move The cost of moving is paid out of the class funds if necessary Our members sleep on flat roofs, piazzas, balconies, or in yards Protection from rain and snow has been usually secured by small wall tents These have been furnished free to all members who could not afford to buy them. An ordinary army tent, measuring seven feet by seven feet with an extra "fly," is used This costs $7 25 But it should be understood that the purpose of the tent is simply to furnish a shelter in time of storm The ventilation in a tent with the sides fastened down is as bad as in a stuffy room Our tents are converted into canopies by tying back the ends and rolling up the sides (Fig 1) In fair weather the head of the bed is drawn outside of the tent so that the face will be exposed to continuous currents of fresh air In stormy or windy weather one or, if necessary, two or more sides of the tent may be fastened down to keep the rain or snow from reaching the bed In summer the tent roof shades the patient from intense sunlight

We use in some instances instead of tents, small balconies, built in front of a window, usually on the second story These balconies are simple platforms protected with a railing Adjustable awnings and screens keep the balcony dry in stormy weather The balcony shown in the photograph (Fig 2) was erected for one of our members by his landlord It cost $11 50 The awning was given by a neighbor Another member had an elevated platform (Fig 3) built for $6 50 Tents may be readily erected on inexpensive roof platforms (Fig 3)

There is an advantage in placing the patient's bed out of doors that I have never seen mentioned It removes the source of infection With the patient lying in bed out of doors the danger of house infection is eliminated, and even if he is careless in his habits Nature's disinfectants sunlight, rain and wind render him practically harmless This applies particularly to patients with advanced tuberculosis It should not be forgotten that Flugge's observations showed that not only the sputum but the smallest droplets of mucus projected from the mouth in coughing, hawking and even in speaking contain tubercle bacilli

In four (27 per cent) of the families now represented in our class, unsuspected cases of tuberculosis have been found among the children The disease seems to be chiefly spread by house infection, and the most dangerous are the advanced cases with persistent cough and abundant expectoration who live in small, overcrowded, ill-ventilated and poorly-lighted rooms

The reason that the death rate from tuberculosis is higher in Boston than in Berlin or London is probably due to the fact that these cities have had hospitals for advanced tuberculosis, while Boston has had none, except for paupers and criminals[1]

We do not use the window tent Doubtless a patient in a properly constructed window tent gets fresh air at night, but in the morning and evening it will be almost inevitable that precious hours are lost in the house that would have been spent in the open air if his bed had been out of doors Furthermore, the window tent does not prevent house infection

THE REST TREATMENT

The chief reason that so many of our moderately advanced cases have recovered seems to lie in the fact that we have insisted on absolute rest in every instance Even in cases without fever, rest in the recumbent position is continued until symptoms of active disease have disappeared I find less difficulty in keeping a patient quiet all the time than half the time The rest treatment simplifies wonderfully the management of the case It saves the patient from many dangers Each patient is provided with a comfortable canvas reclining chair. The friendly visitor at her first visit selects the exact spot out of doors where the cot-bed and chair are to be placed The chair must not be moved without permission Many of the members spend the greater part of the day on their cot-beds This is encouraged The patients are never allowed to take any of the prescribed rest in a sitting position or in any form of rocking chair No sewing or other hand work is allowed and only a moderate amount of reading The "cure" consists simply in keeping in the recumbent posture all the time, except that members free from fever are allowed to dress themselves and to take their meals at the table

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[1] Money has been appropriated by the municipality and plans have been formulated for the establishment of a hospital for advanced cases of pulmonary tuberculosis

The members do not find the enforced hours of rest irksome It is, of course, hard to keep quiet for the first week or two of treatment Much harder for some than for others But the rest habit is soon acquired In the past year not a single member has begged me for exercise It is rare, indeed, that they ask for it after the treatment is fairly begun Our experience supports the opinion of the lady quoted by Benson in his "Upton Letters," who maintained that the recumbent posture was conducive to cheerfulness Resting in the open air seems to keep up the muscle tone, for when walking is finally allowed the amount can be rapidly increased without tiring the patient

Attending the weekly meeting of the class involves considerable exertion and gives us a measure of the gain in strength No one with persistent fever is allowed to attend the class When applications for membership are received from consumptives with considerable fever, they are told to place their bed out of doors and remain absolutely at rest until their temperature is normal The promise is held out to them that they will be taken into the class when their fever leaves Four months ago a man with advanced phthisis and high fever wished to join the class I sent him to bed The friendly visitor called and gave the usual instruction to him and his family and left a record book At the end of a month his temperature had become normal and he was permitted to attend a class meeting He lived at the top of a steep hill On returning home from his visit to me on the day he began treatment he had difficulty in climbing the hill and reached the top exhausted After spending a month in bed he found after starting for the class meeting that he had forgotten his record book He climbed the hill and, to his delight, found that the ascent was no longer difficult and exhausting He gained seven pounds during that month in bed I realize that the effort of making the weekly visit to the class is in some cases tiring and of itself injurious, but in the majority of cases the mental uplift seems to more than compensate for the harm wrought by the expenditure of strength In exceptional instances members are permitted to attend the class only every other week

FOOD

Milk forms the basis of the diet in all the cases Of course, many say when they enter the class that they are unable to take milk It is usually an easy task to prove they are mistaken Milk is nutritious it is easily digested and it is cheap Most of the members take two quarts a few three quarts a day Olive oil is taken after every meal Many object to the taste of cotton-seed oil so that its use has been largely abandoned As the tastes of different races are so different we have allowed them great freedom in selecting their food We insist that they shall take plenty of milk, considerable fat in some form, and fresh fruit

RECORD BOOK

The record book is the invention of Dr C L Minor,[2] of Asheville, N C, and is an essential feature of the class method The patient records his temperature, his pulse rate, the food he eats, and every other detail of the daily life He is required to enter in this diary the number of hours he is out of doors and the amount of milk he drinks The book is inspected by the friendly visitor at every visit and by the physician at the weekly meeting In my experience I have never found that keeping the records leads to introspection or depression of spirits It is a great aid in carrying out the details of treatment The members take pride in keeping neat records It encourages the members to persevere

THE WEEKLY MEETING

This is the most important feature of the class system It is held every Friday in a large, cheerful room at the Massachusetts General Hospital The class meeting is a pleasant social hour for the members One confided to the friendly visitor that the meeting was her weekly picnic Made up as our membership is of widely different races and different sects, they have a common bond in a common disease A fine spirit of camaraderie has been developed They never discuss their symptoms and are almost invariably in good spirits Frequently our graduates drop in at the meeting to get weighed and to greet their old associates The members are weighed each week and their pulse and temperature taken by the friendly visitor, assisted by one of the senior members The greatest gains in weight are posted conspicuously each week on the blackboard, and the member who remains out of doors the greatest number of hours during the month has his record exhibited One patient was out of doors 706 hours in a month, an average of nearly twenty-three out of the twenty-four Some of the sickest members gain this distinction The favorable cases that are making rapid progress toward recovery infuse a spirit of hope in all

After the strength of the member has been tested and increased by carefully prescribing amounts of exercise he is graduated and allowed to work Home treatment has one advantage over the sanatorium in the fact that if health has been regained by leading the out-of-door life at home it is easy to keep up the hygienic habits after recovery A place for sleeping out of doors and a reclining chair for resting in the recumbent posture are still available Our graduates continue to sleep out of doors or with their heads in open windows

MEDICINE

Very few drugs have been given With the patient resting in the open air cough and toxic symptoms quickly diminish so that medicines are rarely needed Although they take large quantities of food, indigestion is rare The use of Priessnitz's chest compresses for cough or pleuritic pains is a routine procedure Tuberculin has been used in many of the cases The three cases of far advanced tuberculosis that recovered were treated with old tuberculin for months

DAY CAMPS

The work of the Parker Hill Day Sanatorium and of the Day Camp maintained by the House of the Good Samaritan will be described by Mr W M Wilson and Dr A K Stone Experience has shown that excellent results can be obtained in these day camps A number of our members enjoyed the privileges of the Parker Hill Sanatorium The good food furnished, the cool shade of the trees, and the pleasant company more than compensates, in most afebrile cases, for the exertion of traveling to and from the camp An ideal location for a camp would be the grounds of a large hospital situated in the heart of the city such as the Massachusetts General, the Pennsylvania, or the Johns Hopkins Camps in connection with hospitals can be maintained at small cost, as proved by Dr Stone and Dr Floyd, at the House of the Good Samaritan in this city In Southern cities the need of a summer day camp in connection with tuberculosis classes will be found well nigh indispensable The heat of mid-day on the little porches and in the little confined spaces in the rear of the houses of East Baltimore, for instance, will be intolerable and the patients will probably be forced into the house unless a day camp is established in some airy, open spot where the members can take the rest treatment under the shade of trees

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[2] N Y Med Jour, Dec 21, 1901, and Jan 11, 1902.

OTHER CLASSES

In Boston and vicinity at least five other tuberculosis classes have been organized The Suburban and the Arlington Street Church classes have already been mentioned In addition to these are the Cambridge and Lynn Tuberculosis Classes and one started by the Mount Sinai Dispensary of Boston intended especially for Jewish patients who can not speak English In January, 1906, a class was formed in Providence by Dr F T Fulton Within the past six months classes have been organized by Dr W L Niles in New York City, by Dr David Riesman in Philadelphia Dr F J Ripley in Brockton, and Dr C Dencker in Baltimore

The class method has proved to be economical and efficient It is hoped that classes will be established in cities where at the present time no systematic effort is being made to cure consumption But it must ever be borne in mind by those in charge of the classes that the necessary conditions in the treatment of pulmonary tuberculosis are, as Dr Osler has said, "rigid regimen, a life of rules and regulations a dominant will on the part of the doctor, willing obedience on the part of the patients and friends"—without these and without the spirit of the living creature within the wheels the system will fail

INSTRUCTIONS ON INSIDE COVER OF RECORD BOOK.

EMMANUEL CHURCH TUBERCULOSIS CLASS

Name
Address
Record from 19— to 19—

NOTES

Make notes of temperature and pulse at 8, 12, 4 and 8 o'clock daily, movements of bowels, hours in open air, all food taken, total amount of milk, total amount of oil and butter, appetite, digestion, sleep, spirits, cough (amount, chief time), expectoration (amount in 24 hours, color, nature), exercise (if allowed), with temperature and pulse 15 minutes after exercise, sweats, visitors

Attend every meeting of the class unless specially excused

RULES FOR REST

Rest out of doors is the medicine that cures consumption Absolute rest for mind and body brings speedy improvement. It stops the cough and promotes the appetite The lungs heal more quickly when the body is at rest Lie with the chest low so the blood flow in the lungs will aid to the uttermost the work of healing The rest habit is soon acquired. Each day of rest makes the next day of rest easier and shortens the time necessary to regain health The more time spent in bed out of doors the better Do not dress if temperature is above 99 F., or if there is blood in the sputum It is life in the open air not exercise, that brings health and strength Just a few minutes' daily exercise during the active stage of the disease may delay recovery weeks or months Rest favors digestion exercise frequently disturbs digestion When possible have meals served in bed Never think the rest treatment can be taken in a rocking chair If tired of the cot shift to the reclining chair, but sit with head low and feet elevated Do not write letters Dictate to a friend Do not read much and do not hold heavy books Remain in the recumbent posture while reading

THE USE OF QUIET

> "There are few medicines better than clouds and you have not to swallow them or to wear them as plasters only to watch them Keeping your eyes aloft your thoughts will shortly clamber after them or, if they don't do that the sun gets into them and the bad ones go a dozing like bats and owls —Charles M Skinner, in 'Do Nothing Days'

BLANK FOR FRIENDLY VISITOR'S REPORT OF FIRST VISIT

Nurse's Report History No.

Name	Address	Age
Place and [illegible]		
House	Stories	Number of rooms
Occupied	[illegible]	
Balcony	Yard	Locality
Dust	[illegible]	
Sanitary conditions	Length of time in present location	[illegible]
Patient's room	Bathroom	[illegible]
Financial condition.	Occupation	[illegible]
Disposal of sputum	Intelligence of patient	Diet with amount of milk taken
Family history	Personal history	
Date of joining class	Date of nurse's first visit.	Time spent
Remarks.	Improvements suggested	

OBSERVATIONS ON PLAGUE IN INDIA*

JUDSON DALAND, MD
Professor of Clinical Medicine in the Medico Chirurgical College and Physician to the Medico Chirurgical Hospital
PHILADELPHIA

Plague, in the time of Galen, was any epidemic disease causing many deaths, but the word is now restricted to that acute epidemic, febrile disease with polyadenitis, due to the plague bacillus It is believed to be transmitted to man by fleas that have infected plague-stricken rats This malady has doubtless existed for ages, and certain epidemics that occurred two or three hundred years before Christ were unquestionably plague

In the fourteenth century plague was pandemic and spread from the tropical and subtropical countries of the East through Europe as far north as Greenland, and it is estimated that the mortality was in the neighborhood of 25,000,000 Between 1876 and 1889 it is estimated that more than 250,000 deaths occurred from plague This disease is now confined to Asia and is only occasionally imported into Europe by way of Turkey The following centers for this disease are recognized (1) Bombay, (2) Uganda, (3) Persia, (4) Thibet, (5) the west coast of Arabia, and (6) eastern Siberia, in all of which plague is always present, either sporadically or endemically, and from these centers epidemics and pandemics originate

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* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City, June, 1907

The plague bacillus was discovered by Kitasato and Yersin in Hongkong in 1894 It is a short, thick bacillus resembling that found in chicken cholera, having a length of from 1 5 to 1 75 microns and a breadth of from 0 75 to 0 7 microns, it is ovoidal, slightly convex, rounded at each end, non-motile, aerobic and frequently appears at a diplobacillus which occasionally joins forming short chains This new organism takes a characteristic bipolar stain with methylene blue, the middle portion often remaining transparent During life the bacillus is easily obtained from the bubo in the bubonic, from the sputum in the pneumonic and from the blood in the septicemic forms, and after death may be discovered in almost all the tissues The following varieties are recognized clinically (1) Bubonic, (2) pneumonic, (3) septicemic, (4) intestinal and (5) ambulatory The vast majority of cases fall under the first group The septicemic form is rare as a primary affection, but is not uncommon in the terminal stage The ambulatory form is most active in the spread of the disease, as the symptoms are so slight as to cause but little inconvenience and, therefore seldom come under medical observation

One of the first cases of pneumonic plague diagnosed during life was that of Maj Manser, who was one of the faculty of Grant Medical College in Bombay and who was under the care of Maj Childe, the present incumbent of the chair of medicine in that institution He presented the ordinary signs and symptoms of pneumonia As extreme prostration showed itself early, Maj Childe suspected the pneumonic form of plague and the sputum, by staining and culture, showed the plague bacillus The patient was in good health January 2 and died January 6 The nurse who attended him fell ill on the following day and died three days later of the same affection There was no dyspnea nor the ordinary pneumonic disproportion of pulse and respiration, the sputum was a pinkish serum and bore no resemblance to the characteristic rusty sputum of pneumonia, and the general condition was far worse than could be explained by the small amount of lung involved

My personal experience with plague includes about 50 cases observed in the Maratha Plague Hospital in Bombay during the summer of 1905 This hospital is especially devoted to plague, although it is occasionally necessary to set aside pavilions for other diseases, such as relapsing fever, etc The hospital is composed of a number of pavilions, one story in height, with beds made of wood, the bottoms of which are covered with rattan These beds are placed on each side of the pavilion and number about 20 or 30 Contrary to our custom the patient faces the window The total capacity of the hospital is about two or three hundred and in times of epidemic, by overcrowding the capacity is doubled No attempt is made to make bedside notes, and all records are placed on the temperature charts, which show the name age date of admission temperature and only occasionally the pulse and respiration A record also is made of the day of the disease and the treatment Blue and red pencil marks are used freely for any additional data

These pavilions are thoroughly well ventilated by numerous windows and doorways The native habitually keeps his head covered by a sheet, which strange custom is probably due to the fact that he is accustomed from childhood to covering his head with a thick turban, which renders the head peculiarly sensitive to drafts and slight changes of temperature when the head covering is removed This sensitiveness is still further accentuated by the custom of wearing the turban during the entire day and evening, excepting when eating or sleeping The natives occasionally utilize this strange head covering at night as a pillow and at all times it serves as a bank, as money may be discovered tied in one corner of the material composing the head dress

Patients with plague are transferred to the hospital by means of a two-wheeled vehicle on the top of which is placed a stretcher This ambulance is painted white and is in charge of two men who supply the motive power The patient is covered by a coarse blanket, and it is the belief of the physicians of Bombay that these patients do not propagate the disease while being transferred from their homes through the narrow crowded streets to the hospital

The expectoration in primary pneumonic cases is infective, and it is believed that the urine may possibly carry this disease, but the discharges from the bowels are believed to be free from this danger Suppurating buboes are often highly infective, and in acute cases the pus from these buboes show large numbers of plague bacilli

The hospital is under the direction of Dr N H Choksy, assisted by a native physician Dr Choksy is possessed of unusual vigor, both mental and physical, and is the happy possessor of an intense enthusiasm and love for his work He is, however, handicapped by duties which belong more strictly to a superintendent, which duties occupy time which should be spent in purely medical work He has been in close association with plague for many years, and to-day probably possesses more practical information regarding the clinical aspect of plague than any physician in Bombay or elsewhere The Parsees, followers of Zoroaster and worshipers of fire, although few in number, are remarkably intelligent, prosperous and charitable, highly neurotic and differ widely from the other nations of Bombay and possess many of the mental and emotional characteristics of the better class of Hebrews Special pavilions are assigned the Parsees in the Plague Hospital, which custom is followed in other public institutions They visit their sick at all hours and in such numbers as seriously to interfere with their proper management and nursing

The Maratha Plague Hospital and the Arthur Road Hospital are so rich in clinical material illustrating various contagious diseases more or less peculiar to India that it is regretable that each medical student in Bombay is not compelled to live a certain number of months with these patients Most of the cases of plague present the ordinary features of the bubonic form of the disease, but few show the septicemic or pulmonic variety The latter occurs in about 0 5 per cent of all the cases, although terminal pneumonia is present in about 10 per cent of the cases When bacilli are found in the blood 98 per cent of the cases are fatal, and many patients enter the hospital and die before the medical officer's visit the following morning Most patients, however, die on the third day, and the average daily mortality among the natives is 81 per cent and among Europeans about 15 per cent

When plague is complicated with tympanitis it is usually fatal, and when the thyroid is affected it consti a grave complication The common complications of plague in the order of frequency are

1 Delirium
2 Cardiovascular weakness or paralysis
3 Tympanitis
4 Persistent vomiting and diarrhea, which are rather uncommon

The rarer complications are

1 Aphasia
2 Peripheral neuritis
3 Bulbar paralysis
4 General acne resembling chickenpox, which may appear in one night
5 Panophthalmitis followed by total blindness, which may occur within twenty four hours
6 Keratitis
7 Hematuria, which was rather common in the last epidemic
8 Meningitis
9 Secondary pneumonia

In one case of plague at the end of the fifth week the classic symptoms of meningitis developed The following combination of diseases are occasionally met with during epidemics of plague (1) Plague and smallpox, (2) smallpox and plague, (3) relapsing fever and plague, in which case the fever chart shows a less marked crisis, but the buboes suppurate, as is usual in plague, (4) plague and relapsing fever, (5) relapsing fever chickenpox and plague, (6) plague and measles, (7) erysipelas leprosy and plague, (8) leprosy, smallpox and plague In all such cases the mortality is very high,

Each of these mixed infections are exceedingly rare In fourteen hundred cases of plague but three of smallpox and plague were observed When a case of plague occurs complicated by epistaxis it suggests the possibility of the coexistence of relapsing fever, and when subnormal temperature and perspiration also are present examination of the blood will show the presence of the spirillum of relapsing fever Occasionally errors in diagnosis occur, of which the following is an example A patient entered the hospital suffering from fever, bubo and pain over the bubo, particularly on pressure During an epidemic of plague these symptoms are usually sufficient to make a diagnosis of plague Two such cases occurred in men sent from a jail in Bombay Examination showed that the bubo was an old enlarged gland and that the skin overlying was hyperesthetic The blood examinations proved that they were cases of relapsing fever and not plague, and many hundreds of inmates of the jail were later seized with this malady

The number of cases of plague in India during the summer of 1905 was comparatively few and many of the pavilions were empty I observed in the neighborhood of fifty cases, however, all occurring in natives The average daily mortality in Bombay was forty, during an epidemic it rises to one or two thousand Many die in their homes without medical attendance. The majority of patients were ill two or three days prior to their admission to the hospital The vast majority of the cases were of the bubonic variety and the glands usually affected were the inguinal or femoral, the axillary or cervical, and there was one example of primary involvment of the isthmus of the thyroid

Not infrequently the inguinal or axillary or the inguinal and cervical would be affected in the same individual In the majority of cases the diagnosis was based on (1) Sudden onset, (2) extreme prostration, (3) fever, which usually decreased on the third day, and (4) painful glandular enlargements or buboes In no instance was the diagnosis corroborated by the discovery of the plague bacillus Clinically the introduction of a hypodermic needle into an enlarged gland and the removal therefrom of a small quantity of lymph in which the pest bacillus may be recognized, establishes the diagnosis in doubtful cases Unfortunately the natives object to autopsies and it is the policy of the government to acquiesce so as to popularize the hospitals In consequence no autopsies have been performed in the Maratha Plague Hospital for more than four years

As a rule the onset of plague is sudden as if the patient was "stricken down," and although diarrhea is uncommon, it has been observed before death and is colliquative in character The washed-leather appearance of the tongue is diagnostic

The following is the report of two cases of plague one occurring in Dr N H Choksy and the other in his father-in-law

Case of Dr N H Choksy —The attack began on the morning of May 7, 1904, the axillary gland showing enlargement, probably from an infection received through a small blister, which was unopened, situated on the tip of the left index finger The temperature rose in a few hours to 106 F, accompanied by delirium There was considerable periglandular inflammation and edema and the bubo was only moderately painful The first two injections of the Roux serum were 100 c c each and subsequent injections were smaller On the first day two injections were given, on the second day two and three injections were given subsequently and in all 400 c c were administered Ordinarily 100 c c repeated thrice, at six hour intervals, are sufficient to abort ordinary cases of plague Four hundred c c of serum were injected around the bubo and one injection was given on the opposite side The temperature descended to normal on the fourth day Afterward there was an interval of five or six days during which time he was in good health and then fever occurred with urticaria, an after effect of the serum This urticaria affected both upper extremities, which became extremely red, many wheals formed and itching was extreme Later a third rise in temperature ensued with pain and swelling, one after the other, of almost all the joints of the body, the wrists, elbows, shoulders, hips, knees, ankles and maxillæ These joint phenomena were secondary to the serum During the third week severe neuritis accompanied by spasms occurred, chiefly affecting the thighs and legs The least movement was agonizing Morphin and atropin were useless Improvement was eventually secured by the use of opium, which was spread all over the limbs, which were bandaged afterward with cotton He remained drowsy for three days Spasms, weakness of the limbs and wasting of the muscles caused great suffering for four months Although right handed the muscles of the right forearm are less in bulk than those of the left In five months he was able to begin work, but it was necessary to move with great caution as the slightest over use of the muscles immediately induced spasm Lithicin in two grain doses, four times a day until 200 grains had been taken, improved the tone of the muscles, lessened pain and increased weight Occasionally the glycophosphites act beneficially in the nervous troubles following plague Moderate fever was produced by nervousness and suffering and his medical adviser ordered suppositories containing quinin, which produced proctitis with retention of urine, to alleviate which a rubber catheter which unfortunately was unclean was passed and was followed by cystitis Following the proctitis, hemorrhoids, from which he had occasionally suffered, became acutely inflamed and rectal hemorrhages frequently occurred during a period of two months and almost caused death Relief was secured by a complete change in diet, as drugs were valueless

Case of Dr Choksy's Father-in Law —The patient was infected May 1, 1905 Returning home from business at 7 p m, he felt sick with slight pain in the groin He was able, however, to take dinner as usual, and had none of the premonitory symptoms described by Hunter. As the pain in the groin increased and fever appeared, he lay down. At 9 p. m. the temperature was 101 F. and the pulse was rapid. He declined medical assistance, feeling that it was unnecessary, but in one hour, i. e., 10 p. m., the temperature had risen one degree. At 10:30 p. m. he was given 100 c.c. of serum and the following morning another 100 c.c., and at 4:30 p. m. a third injection of 100 c.c. In spite of these injections a bubo appeared on the opposite side, showing the malignancy of the infection. After the third injection the temperature fell and on the morning of the third day became normal. On the fourth day two injections of 50 c.c. each were given as a prophylactic and the buboes rapidly declined in size and he made a good recovery.

While I was in Bombay the plague commission was engaged in successfully solving the question of the transmission of plague, preliminary communications have already appeared in print and further reports will soon be published. Their experiments prove that fleas from rats dead of plague are able to transmit plague to rats, guinea-pigs and monkeys.

By an ingenious method devised by Captain Liston infected fleas were secured by placing a live guinea-pig in a room in which plague had occurred. Although a rat flea will not by choice select another animal as its host, under the influence of hunger it will attack almost any living animal. A cage of healthy rats surrounded by a fine wire gauze, when placed in a room from which patients dead of plague had been removed, remained free from plague, whereas the majority of rats, exposed in a similar manner, unprotected by wire gauze, died of plague. When rats imported from England were thus exposed they all died of plague, which suggests that a certain proportion of Bombay rats are immuned to this disease. Complete protection of healthy rats, when confined in an ordinary wire cage and placed in an infected room was secured by suspending the cage in the air or by placing it on the floor, provided it was surrounded by a strip of fly paper wider than a flea could jump. Infected fleas secured by the live guinea-pig method, when permitted to attack healthy rats, guinea-pigs or monkeys in flea-proof cages, caused an epidemic of plague among these animals. The discovery by Captain Liston of the rat flea on the body of a Hindoo dying of plague adds one more link to the chain of evidence tending to prove that the infected flea from the plague-stricken rat is the transmitter of plague from the rat to man. It will be most interesting to learn the precise manner in which this transmission occurs and the behavior of the *Bacillus pestis* while in the body of the flea.

For many years the natives of India have been convinced of the necessity, during epidemics of plague, of (1) evacuation of villages when disease and death appears among rats, (2) burning the houses of the villagers, (3) destroying the roofs of houses so as to permit the sunshine to penetrate all portions of the dwelling as the flea prefers darkness. The correctness of this belief is easily comprehended in the light of the results secured by the plague commission, as is also the cause of the infrequency of plague among Europeans.

It is regretable that the time allotted to this communication forbids a discussion of sanitary and quarantine questions, the present status of the treatment of plague by sera prepared in accordance with the methods of Prof. Lustig of Florence, Prof. Terni, formerly of Messina and now of Milan, and Dr. Brazil of San Paulo, Brazil. Consideration should have been given to the efficiency of adrenalin, spartin, caffein, the uselessness of alcohol and the undoubted value of Haffkine's serum as a prophylactic in plague.

THE QUALITY OF PUBLIC WATER SUPPLIES *

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It is particularly gratifying to me to be called on to speak before a gathering of physicians, as it gives an excellent opportunity to air certain grievances which, as a sanitary engineer, I have against the physician.

One of the chief of these grievances is that there is often so little apparent relation between the quality of a water supply and the health of those habitually using the water. Engineering is supposed to be an exact science, and when the cause is present the engineer looks at once for the effect. It grieves him, therefore, when a water supply is obviously polluted, when it is known to contain excreta from typhoid fever patients, that the epidemic of typhoid fever does not follow. On the other hand, he is even more annoyed when, after he has introduced an unpolluted water supply, the high typhoid fever death rate which obtained when the polluted supply was in use is not materially reduced.

Another grievance of the sanitary engineer is the impossibility of obtaining from the physician any satisfactory conclusion as to the results of the use of water which is not contaminated by sewage but which has other features generally considered undesirable. For example, we have always wished to know the effect of habitually using a very hard water or a water containing large numbers of live or decaying organisms. We have been given vague answers to the effect that while no specific diseases may be caused by such conditions in the water supply, the general effect on the system is bad and may make the users of the water more susceptible to diseases of various kinds.

All this to the man of engineering training is exasperating. One or two well-known examples illustrative of our trials may be of interest. In the city of Lawrence, Mass., the water supply was for many years taken directly from the Merrimac River, and the death rate from typhoid fever in that city was abnormally high. In 1893 a slow sand filter was constructed through which all of the water supplied to the city has since been passed and the death rate from typhoid fever was immediately greatly reduced and has continued low since that time. This seems to be a clear case of reduction in the mortality from this disease due to the filtration of the public water supply. If this was the only fact which the statistics show, the results would be satisfactory, but coincident with this reduction in the death rate from typhoid fever is a corresponding reduction in the death rate from almost every other disease. In fact, the general death rate has been very greatly reduced since the introduction of filtered water. If we say that the typhoid fever death rate has been lowered by abandoning the polluted water supply shall we say also that the mortality from other than the so-called water-borne diseases is reduced by an improved water supply?

In the city of Washington, a polluted water supply has been in use for many years and the death rate from typhoid fever has always been high. Recently works for the purification of the water by slow sand filtration have been completed, but there has been practically no reduction in the number of deaths from typhoid fever.

Is it any wonder that the man whose training has been in an exact science is somewhat distressed by being met with such facts as these? Fortunately, however, the engineer, in dealing with water supply problems to-day, is working for something beyond the public health, namely, public comfort. The public, in many parts of the country at least, is no longer satisfied simply to know that the use of a water supply will not produce typhoid fever, but it is unwilling to drink water which is known to contain the excreta from human beings, or water which is so hard as to be unfit for domestic purposes, or water which is so highly colored or which contains organisms giving objectionable appearance, taste or odor. In fact, it is no longer satisfied with a water which is dirty, even though it may be safe.

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It surprises us many times, when we carefully examine the sources of supply, to discover what we have been drinking and enjoying. It is not appetizing, to say the least, to think of drinking water from a pond which is frequented by fishermen. Neither is it appetizing to see cows wading in a stream which provides water for our table use, yet these are the conditions which we have contentedly endured until the more recent demands for clean as well as safe water.

Waters which are free from objectionable appearance, taste or odor, as well as free from contamination, are found in nature only in the ground. A good ground-water supply obtained from a spring or well is undoubtedly the most satisfactory supply which can be secured. A good ground water is clear, colorless, odorless and practically free from any organic matter whatsoever. Any community which is favored with large areas of sandy or gravelly soil from which water can be obtained has little excuse for having a poor water supply.

There are many cities and towns where water supplies of inferior quality are in use or where expensive filtration plants have been constructed, while there is an abundance of water of excellent quality in the ground which can readily be secured.

A point in favor of ground waters which may seem of minor importance but which really means much to the consumers is the low temperature at which the water is supplied to the consumer. The temperature of ground water as delivered in the houses during the warmest months has been found in Massachusetts to be from 52° to 55° F. The water derived from surface sources is delivered to the consumers at a temperature of from 70° to 75° in warm weather. The chief points to be guarded against in obtaining a ground-water supply are the presence of iron and an excess of hardness. Hardness is likely to occur when water is obtained from soils containing limestone. Iron occurs usually where there is much organic matter in the soil from which the water is derived or through which it passes on its way to the wells. The presence of iron renders the water almost useless for many domestic purposes, but it can be removed without any serious difficulty, although the iron occurs in many different forms and different treatment must be employed with different waters.

In speaking of water obtained from wells, I do not refer to artesian wells, but to shallow wells which have depths of from 30 to 50 feet. Artesian wells are undoubtedly of great value in many parts of the country, but in New England, at least, they are seldom satisfactory and can not compare with the shallow wells drawing water from sandy or gravelly strata at a not very great distance beneath the surface.

Where the area of sandy or gravelly soil is not extensive and the quantity of water to be obtained from it limited, there are several ways of increasing the supply. If the water-bearing material is found in the vicinity of a pond or stream, the yield of the wells can be increased by infiltration from the neighboring surface-water source if the wells or filter galleries are properly placed. It is also possible to increase greatly the yield from the ground by flooding areas in the vicinity of the wells with water from some surface source. These are things which should be done intelligently, since trouble is apt to occur if surface water enters the wells too rapidly and is imperfectly purified.

Ground-water supplies have been in use for many years, but there are many places where the water-supply problem could be solved very satisfactorily if these sources of supply were better understood. It has been unfortunate that such supplies have been developed by well drivers rather than by engineers. The selection of a ground-water supply by a well driver is much the same as the regulation of plumbing by plumbers as practiced in many of our cities.

Where ground waters can not be obtained, the most satisfactory substitute to meet the modern demands for a water not only free from pollution but free from other objectionable characteristics is a filtered surface water, and the time is not far distant when all surface waters will be filtered before being delivered to the consumers. It is now possible to make almost any water suitable for domestic use by applying the proper treatment, but there is a tendency to think that because any water can be made suitable for domestic purposes any water will do as a source of supply, providing it is filtered. In fact, the advisability of neglecting the sources of supply and filtering the water is being publicly advocated in some places. This, it seems to me, is a very dangerous tendency.

Certain of the dangers attending the use of a polluted water supply after filtration are obvious. We need only recall the recent epidemic of typhoid fever in Butler, Pa., where a large percentage of the population was stricken with typhoid fever on account of the temporary shutting down of the filtration plant while making necessary repairs. Other examples of perhaps less serious character have occurred which show on how slender a thread the health of a community hangs which depends for its water supply on the proper operation of a filtration plant managed frequently by ignorant workmen.

There are some cases in which it is necessary to use water which has been polluted, and in such places the only safeguards are in properly designed works so constructed as to make it difficult to operate them improperly and in the operation of the works by competent and trustworthy men.

Surface water sources can be greatly improved in many cases without filtration. The most effective method is by storage for a considerable time in a deep pond or reservoir, with bottom and shores free from loam and mud or other organic matter. If water could be stored for a sufficient time and under proper conditions all disease germs would be killed, the water would become colorless and in every respect excellent for domestic purposes.

The water found in such lakes as Winnepesaukee in New Hampshire is at most times an almost perfect water, notwithstanding the fact that many of the tributary streams contribute water of very inferior quality. I say at most times, for all such waters are subject to objectionable tastes and odors. The conditions in Lake

Winnepesaukee can be approximated artificially and some of the reservoirs recently constructed, like the Wachuset reservoir of the Metropolitan water works in Massachusetts are giving water of most excellent quality, although the water entering theim is highly colored and contains large quantities of organic matter

The best evidence we can have of the safety in the use of such waters is the fact that our large cities, like Boston and New York, which are supplied from storage reservoirs, never have an epidemic of typhoid fever which can be attributed to the water supply, although the feeders of the reservoirs are known to be polluted The weak points about such supplies are the possibilities of local contamination which may quickly reach the point from which water is drawn and the occasional troubles from tastes and odors due to growths of organisms

Running streams are the least desirable sources of supply and I do not believe there is any stream, accessible for water supply purposes, which can be considered a safe source from which to take water directly Although there may be no permanent sources of pollution on the watershed, it is absolutely impossible to prevent access to the stream, and when we consider that any pollution entering the stream at any time is almost immediately taken into the distributing pipes of the water supply system the danger is obvious Such supplies if used at all should invariably be filtered

Experience is showing us that the nearer we get to nature, either in disposing of sewage or in obtaining a water supply, the better the results secured The old-fashioned cesspool which has been so much abused is now considered the best method of disposing of small quantities of sewage In methods of water purification the most satisfactory are those where nature is assisted as little as possible. The addition of chemicals or the construction of works which require constant personal attention, while frequently necessary, should be adopted only as a last resort

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FILTRATION OF PUBLIC WATER SUPPLIES *

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The purification of municipal water supplies by filtration has been practiced for over seventy years Apparently the first filter of considerable size was that constructed by the city of London in 1829, and that city now has about 120 acres of sand filter beds Berlin, Germany, built water works and sand filters in 1856, fifty years ago, and at the present time practically all the important cities of Great Britain and Germany filter their water supply if this water is taken from a surface source Filtration of public supplies is widely practiced in other countries, especially Belgium and Holland Even Russia has several large municipal filters, a recent article in the *Engineering Record* describes large sand filtration plants in Japan, while in India and Egypt a number of large municipal supplies are treated by mechanical filters

The first large municipal filter in America was constructed at Lawrence Mass in 1892-93, although at Poughkeepsie and Hudson N Y, St Johnsbury, Vt, and Nantucket, Mass small filters had been previously built, the first one being that at Poughkeepsie, N Y, constructed in 1872 During the last half of the last century public water supplies in America increased greatly in number, but perhaps the true beginning of the modern desire for pure water in this country, in distinction from the desire for enough water, was given by the State Board of Health of Massachusetts in 1886, when systematic examinations of the water supplies of the state were begun frequent analyses of these supplies made and the Lawrence Experiment Station established

Filtration of water is resorted to for various causes To remove disease germs and render a polluted water safe, to remove undesirable organic or mineral matter present in suspension in water and thus improve its appearance, to remove color and to remove tastes and odors and the organisms causing these tastes and odors

The first municipal filters were constructed for the purpose of improving the appearance of public supplies, and for many years the removal of organic and mineral matter in suspension in the water was believed to be the chief benefit of filtration Studies showing the efficiency of sand filters in removing bacteria from water were begun in Berlin in 1884 and since that date the water supply of the city of Berlin has been systematically examined bacterially, and since 1888 constant bacterial examinations of the water supplies of London have been made In 1887 the Massachusetts State Board of Health began at the Lawrence Experiment Station its investigations on the filtration of water and the purification of sewage, and since then notable studies of the science of water filtration have been made by various municipalities in this country At Lawrence the studies for many years were directed entirely to what is known as slow sand filtration, but of late years other methods have been studied at Lawrence and mechanical and other forms of water filters have been operated The improvement of water by double filtration has also been extensively studied there

The municipal studies in America have been directed almost entirely to determining the comparative efficiency and applicability of sand and mechanical filters in the treatment of the various kinds of water necessary to use in various sections of the country, together with studies of sedimentation, coagulation by different coagulants, etc In the Lawrence studies more than seventy-five experimental water filters have been kept in operation for periods varying from a few months to fourteen years, and with the laboratory facilities of the station almost every conceivable determination of the efficiency of these filters has been made Daily determinations of the bacteria in the raw and filtered water and chemical analyses to show the work of the filters in removing color organic matter, etc, have been made, the effect on filter efficiency of different rates of operation, different depths of filter and filter efficiency when treating different waters have all been exhaustively studied and the results given from year to year in the Lawrence Experiment Station reports

Since the Lawrence filter was built in 1893 sand filters have been constructed at Mt Vernon, Albany, Providence Philadelphia, Washington, Yonkers, New Haven, Springfield Bar Harbor and other places, and such filters are in process of construction at Pittsburg, Pa, Cincinnati, Ohio, and South Norwalk, Conn Investigations are also under way looking to the filtration of the old and new water supplies of the city of New York

Mechanical filters began to be extensively used in America, especially throughout the south and west, in the latter part of the 80 s, largely, however, for the purpose of clarifying river water rather than for bacterial purification In 1904 it was estimated by Hazen that 560,000 people in America were supplied with sand filtered water and 3,000,000 with water treated by mechanical filters In the past three years, owing to the introduction of sand filters at Washington, Philadelphia Providence and other places the number of people supplied with sand filtered water has more than tripled, so that at the present time about 2 000,000 people in this country are so supplied

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The government has recently constructed covered sand filters of twenty-nine acres in area at Washington, these filters having a capacity of 75,000,000 gallons daily Filter beds twenty-two acres in area supplying 288,000 people have recently been constructed in Philadelphia and fifty acres are in course of construction, while at Pittsburg forty-six acres of filter beds to supply a population of 400,000 are being constructed and will be completed probably during 1908 The introduction of mechanical filters constructed on a scientific basis has also gone forward with great rapidity during the past few years and probably 1 000,000 more people are supplied with water purified in this way than were supplied in 1904 The filters at Little Falls and Hackensack, N J, are the largest of this type of filter yet constructed

A sand filter is a very simply constructed affair It is in its essential features merely a body of sand of sufficient thickness, underlaid or supported on a few inches of coarse and fine gravel or broken stone, with a proper number of pipe underdrains to collect the water that passes down through the sand, the filtering material enclosed by a suitably constructed concrete masonry basin with tight bottom and sides and in the northern states covered with a roof These are its essential features of construction, but the details can be varied through wide limits and by the engineering skill of those engaged in planning and building filters, they are being constantly improved, these improvements tending to simplify filter operation, to promote constant efficiency and to reduce the cost of filtration

Such sand as that in the Lawrence filter will, when first placed in position, allow 50,000,000 gallons of water daily to flow through one acre of surface area, such sand as in the Albany filter will, theoretically, allow under the same conditions about twice as much water to pass through As the sand remains in position and in constant use, however, it becomes compacted and its maximum rate decreases very materially, so that under the same conditions of head, free underdrains, clean surface, etc, the maximum rate of the filter may be only one-half or one-fourth as great as when first put in use During the past two or three winters the volume of water that could be made to pass through the Lawrence municipal filter decreased so materially, owing to compactness of the sand due to use and continued water pressure, that it has been a serious problem to filter a volume sufficient for the city's needs An experimental filter at the experiment station, of the same grade of sand as in the municipal filter and of the same age of operation, has shown similar results as to decreased capacity to flow

The maximum rate at which a filter may be operated has little connection, however, with the actual rate necessary for bacterial efficiency In Germany the official rate of filtration recognized by the imperial board of health is 2 57 million gallons per acre daily The experiments at Lawrence and elsewhere in this country, however, have shown what common sense would tell us, that the rate of filtration may vary very materially with the character and degree of pollution of the raw water Lawrence experiments make it clear that under careful supervision badly polluted water can be filtered at rates as high as 3,000 000 to 4,000 000 gallons per acre daily with entirely satisfactory results and that with ordinary river and reservoir waters, not grossly polluted, rates of 5 000 000 gallons per acre daily can be safely followed A sand filter containing from three and one-half to five feet in depth of suitable sand and filtering polluted water at the rates mentioned, is capable, under proper conditions of filtration and skilled operation, of removing 99 per cent or more of the bacteria present in the applied water and a considerably larger percentage of the bacteria of intestinal origin present in such water

For nineteen years experimental sand filters have been in operation at the Lawrence Experiment Station For fourteen years the Lawrence municipal filter has been in use and the Albany filter plant since 1899 Daily records of the bacterial efficiency of the Lawrence filter and the Albany filter show that by proper supervision a thoroughly satisfactory effluent from a bacterial point of view can be obtained at the rates followed at these places Constant chemical analyses show, moreover, that organic matter can be reduced about 50 per cent and coloring matter from 20 to 10 per cent when filtering such river water as passes to these two filters It has been found that not once has the average yearly efficiency of the Lawrence filter fallen below 98 5 per cent, and that during the past eight years it has been about 99 5 per cent The Albany figures on the table show a similar result

In the operation of sand filters a certain amount of sand clogged with organic and mineral matter has to be removed from the surface every little while in order that the filter may be kept in operation and the required rate of filtration and volume of filtered water be obtained At Albany the period between scrapings averages about twenty-five days and at Lawrence practically the same period elapses At each scraping about one-half inch of clogged sand is removed, although when the laborers employed in this work are skilful a lesser depth is taken away at each scraping, the depth that must be removed varying, of course, with the character of the matter in and removed from the raw water, for example the Potomac river water passing to Washington filters contains fine clay particles that penetrate to a considerable depth below the surface and cause deeper sand removal than necessary at Lawrence or at Albany, while a filter receiving lake water free from turbidity would need even less sand removal than the Lawrence and Albany filters The sand removed is subsequently washed and replaced Replacement of sand is usually carried out once or twice each year and at this time the filters are filled to grade with new or washed sand At the present time sand is removed from filter beds by water pressure, that is, a movable hopper connected with pipe or hose is placed on the filter and moved about from place to place and the sand that has been scraped from the filter surface and heaped up is shoveled into it A stream of water passes through the bottom of this hopper, carries the sand into a pipe and through this to the washing area According to Lawrence and Albany figures, the cost of filtration exclusive of interest on plant is about $1 50 per million gallons of water filtered This includes scraping, ejection of sand, washing of sand, replacement of sand and general care of the filter beds. At Washington by improved methods and machinery the cost is stated to be only about one-third of this or 50 cents per million gallons. Including interest on cost of plant and depreciation the cost of sand filtered water averages about $10 per million gallons filtered.

The first scientific work in this country on water filtration was that in Massachusetts where the comparatively clear river water of the eastern states was experimented with. It was found that such waters polluted by considerable amounts of organic matter and containing the dangerous bacteria from the sewage of cities along their course could be successfully and comparatively cheaply treated by sand filtration. When the studies were begun at Louisville, Cincinnati and elsewhere on the turbid waters of the central and western states carrying at times of flood large amounts of clay and silt in suspension it was found that sand filters were but poorly adapted to the filtration of these turbid waters without extensive preliminary treatments of such waters. Bacterially they could be made about as efficient as in the east but owing to the large amount of matter in suspension in these waters and the fineness of many of the particles of this matter sand filters would quickly clog and the effluents produced were not of a satisfactory quality as regards freedom from matters in suspension. It was also found that it was not economical even with mechanical filters to treat the western river waters directly but that large sedimentation basins capable of holding from one to many days supply of water were necessary and the addition of coagulants in different amounts at different times before filtration, varying with the character of the water treated. It was found however that a purification system suitably planned consisting of sedimentation basins apparatus for the introduction of coagulants and properly constructed mechanical filters was capable not only of producing satisfactory effluents from a bacterial point of view but also effluents of a satisfactory clearness and freedom from color.

The simplest form of mechanical filter used in paper mills and elsewhere where a clarified water is desired is a large wooden tub with a couple of feet of sand in its bottom over underdrains and strainers and supplied with mechanical devices by which the sand can be agitated and washed in position by reversing the current of water and passing it up through the sand. In connection with such filters in mills a coagulant, such as sulphate of alumina is often used, but often also the water is simply strained by the sand at a very high rate without the use of a coagulant. Early forms of mechanical filters employed such filtering materials as charcoal, coke, etc., and water was in some instances passed through under pressure from the city mains. The coagulant, sulphate of alumina, when introduced into an alkaline water decomposes and the gelatinous hydrate of alumina is formed which gathers in aggregates the organic matter, suspended mineral water and bacteria of the raw water, and, by the formation of these aggregates and their subsequent entanglement and collection at the filter surface, forms a most excellent body for the retention of bacteria and organic matter. By the use of a coagulant and this formation and the use of coarse sand, rates of 75,000,000 to 125,000,000 gallons per acre daily can be maintained.

From the first crude type of mechanical filter, through the experience of those engaged commercially in installing filter plants, and also as a result of the able investigations carried on at Louisville, Pittsburg, Cincinnati and other places by experts in water purification, a new type of filter has been evolved. This new type is a combination of a mechanical and sand filter, although of course, much nearer the mechanical filter form. The chief change, however as typified by those recently constructed, is that it is built of practically indestructible materials, concrete or re-enforced concrete, instead of the perishable wooden forms formerly employed. The sand beds are considerably larger than the old wooden tub mechanical filters but still small compared with the beds of slow sand filters. Improved devices for the even passage and collection of water after passing through the sand have been devised and also better and more efficient methods of washing the sand. Filters of this new and improved type have been installed at Little Falls and Hackensack N. J. at Ithaca and Watertown N. Y., Louisville, Ky., Harrisburg Pa. and are being planned for other places. At Little Falls, N. J., the first large plant of this new and improved type was constructed and put into operation in 1902. This plant is designed to have a capacity of 32 000 000 gallons daily and covers a total area of only about 1¼ acres. It has 32 individual filter beds of 360 square feet each, a coagulating and subsiding basin with a capacity of 1,750 000 gallons and a clear water basin of 2½ million gallons capacity. The filters are constructed above the clear water basin. The water filtered is taken from the Passaic River and is a water somewhat dirty in appearance not highly polluted, but unsatisfactory for domestic use on account of its appearance and the matters in suspension in it.

Sulphate of alumina is used as a coagulant in amounts averaging about 1.3 grains per gallon and in order to supply sufficient alkalinity to cause good decomposition and coagulation and prevent the passage of undecomposed alum into the effluent, soda ash is used in amounts averaging about ½ grain per gallon. These filters contain 2½ feet in depth of sand of an effective size varying from 35 to 40 mm placed over fine gravel or broken quartz and this resting on the filter floors in which are inserted the strainers. In washing the sand in these filters water is passed up from below and the sand agitated by compressed air instead of by the stirring rakes formerly employed. The dirty wash water flows away through the inlet pipe to which a branch is attached leading into the sewer. The rate of filtration employed is 125 000,000 gallons per acre daily. This filter removes more than 98 per cent of the bacteria in the applied water, about 85 per cent of the coloring matter about 40 per cent of the organic matter determined as albuminoid ammonia and a much greater percentage of the total organic matter. It lowers the temporary but increases the permanent hardness of this water about 40 per cent.

When a slow sand filter is first put into operation the water comes through almost unchanged, and before good filtration—that is, good bacterial efficiency—can be obtained, the sand grains, especially those near the surface of the filter, must be covered with films of organic matter and this organic matter be filled with the bacterial life which is capable of entangling and destroying the ordinary water bacteria and disease germs present in the raw water. That is, sand filtration is not entirely mechanical straining, but largely a bacterial process of water purification.

With the ordinary New England waters several weeks are necessary for this process of biologic construction to be established With a clear water containing little matter in suspension, a longer period even is necessary and finer sand in the filter is of advantage When the filter has by this biologic construction become a proper medium for the efficient filtration of water, it not only removes bacteria but also improves the appearance of the water It will also remove from ordinary river and pond waters a large part of the odor and tastes present in these waters At the low rates at which sand filters are operated, this biologic purification is the efficient agent by which disease germs and organic matter are removed In mechanical filtration where rates 30 to 50 times as great as ordinary sand filter rates are used, this natural purifying agency is much less efficient and the removal of bacteria depends very largely on the coagulant used, and the flocculent precipitate formed by it, which entangles the bacteria In sand filters at a 3,000,000 gallon per acre per day rate, the water passes downward through the sand at a rate of about 4 5 inches in depth per hour, but in mechanical filters operated at a rate of 120,000,000 gallons per acre daily the water passes downward at a rate of practically 180 inches per hour

I have stated that the actual cost of operation at Lawrence and Albany is about $1 50 per million gallons filtered I understand that at Little Falls, N J it amounts to slightly more than $3 per million gallons filtered exclusive of cost of filtered water used in washing the filters, and the water used in this way amounts to about 4 per cent of the total effluent

In connection with this, however, it must be stated that while the operation of mechanical filters in which coagulants are used is more expensive per million gallons filtered than sand filtration, yet when the smaller cost of the mechanical filter plant is taken into consideration, the actual cost of each method of filtration, including interest on plant, etc , is ordinarily about the same per million gallons of filtered water obtained

The efficiency of a mechanical filter depends almost entirely on invariably applying a correct amount of coagulant for the water being treated, however much it may vary from hour to hour and in a suitable period for the decomposition of the chemical coagulant and for sedimentation before the water passes to the filter In slow sand filtration the changes of the water and the personal equation are not such important factors, as the sand filter operating at a low rate adapts itself more readily to changes in the character of the raw water, receives no coagulant and its efficiency rests on natural rather than chemical means It is, of course, true that on this account a slow sand filter is more easily worked by unskilled hands and better results obtained than when a mechanical filter is operated by those insufficiently trained to appreciate the necessity of constant care and attention This gives a certain percentage of safety to the slow sand filter A decrease of filter efficiency even for a few minutes may, of course, be of serious moment when treating a polluted water, and especially if these few minutes occur several times in the course of a day or of a week It is the aim at the present time of those planning mechanical filters of the modified type, used for the purification of public supplies, to so construct them that failures are almost impossible Constant examination of the raw water and effluent is also insisted on It is undoubtedly true that, with expert supervision, a mechanical filter of the latest design is capable of giving a bacterial efficiency nearly equal to, but probably not quite as great as, that obtained by sand filters Whether this very slight difference in efficiency is of any hygienic importance or not yet remains to be demonstrated

I have collected some data bearing on this phase of the water filtration problem, the results covering thirteen different experimental filters and two large filtration systems In every case the period that I have selected for comparison of these filters has been such that each, as far as I can determine, was being operated under normal conditions and all analytical results obtained during this period are included in this comparison From the figures obtained it will readily be seen that the efficiency of all these filters was at times lower than the normal and desired efficiency Taking the results of the two types of filters collectively, the slow sand filters had an efficiency of over 99 per cent 42 per cent of the time, of over 98 per cent 64 per cent of the time, and below 95 per cent 13 per cent of the time, while the mechanical filters had an efficiency of over 99 per cent 32 per cent of the time, of over 98 per cent 49 per cent of the time, and less than 95 per cent 28 per cent. of the time The filters used in this comparison are the Lawrence city filter, the Little Falls filter and experimental mechanical and sand filters at Lawrence, Washington, Cincinnati, Pittsburg and New Orleans

Finally, the chief test of the efficiency and value of filtration is the effect that filtered water has on the health of a community using such water compared with the health of the same community when using polluted water before the introduction of filters, or, of course it can be shown also by comparison between communities using purified water and those still using polluted water Unfortunately, few results are obtainable showing the direct effect on the health of a city of mechanically or chemically filtered water, while we have, on the other hand, many illustrations, especially abroad, of the hygienic efficiency of slow sand filtration and in this country the results of years of operation of the Lawrence filter and Albany filter The Lawrence results have been related so frequently that many of you are familiar with them, but, as they are as yet the foremost American exemplification of the value of sand filtered water, they must be repeated here

The water works of the city of Lawrence were built in 1875, water being taken from the Merrimac River, and soon after their introduction the number of deaths from typhoid fever in the city began to increase It was finally recognized in the last of the '80s that whenever there was an epidemic of typhoid fever in Lowell, which occurred practically every year, there was also an epidemic of typhoid fever in Lawrence, the city of Lowell, with its present population of 100,000 people, being located about nine miles up the river from the intake of the Lawrence water works and all its sewage passing into the Merrimac Investigations showed that infection from Lowell reached Lawrence and was distributed throughout the Lawrence water supply system, and this investigation resulted in the construction of the Lawrence filter in 1892 and 1893

In the tables given showing the growth of the city of Lawrence in population, the total number of deaths in the city, year by year, is also shown and the total number of deaths from typhoid fever before and after the construction of this filter It will be seen from this table (Table 1) that the greatest number of deaths from typhoid fever in the city namely, 60, occurred in 1890, when the population of the city was less than 45,000, that in 1892, the year before the construction of the filter the total number of typhoid deaths was 50, the city having in that year a population of about 48 000, *in 1894, the first year that filtered water was supplied* to the city, the number of deaths from typhoid de*creased to* 24 (*more than in any subsequent* year to date, as shown by the table), and the total deaths in the city decreased *more than 300* or from 1,211 to 901 In 1906 the total number of deaths was 1,330 an increase of 9 8 per cent, and the *population of the city* was 76 000, an increase of about 75 per cent The total number of deaths *from typhoid fever in 1906* was 15, as against 50 in 1892, making the comparative death rate from typhoid fever as follows In 1892, 111 per 100,000, and in 1906, 20 per 100,000, or a decrease of 83 per cent The rates for the intervening years are shown on the table In Albany the reduction was from an average of 71 5 deaths per year from typhoid for the nine years preceding the building of the filter to an average of 23 8 for the six years following construction The reduction in the number of cases of typhoid in Albany was from an average of 424 8 cases per year for the nine years preceding the building of the filter to an average of 100 5 for the six years following construction The total deaths also decreased very remarkably as at Lawrence

TABLE 1

VITAL STATISTICS, LAWRENCE, MASS, 1888 TO 1906 INCLUSIVE.

Year	Total number of deaths from typhoid fever	Typhoid death rate 100 000 of population	Total deaths	Population
1888	48	120 0		43 100
1889	55	127 5	1122	43 800
1890	60	133 3	1191	44 700
1891	55	122 0	1136	46 200
1892	50	111 1	1211	47 700
1893	39	86 6	1171	49 200
1894	24	50 0	901	50,700
1895	16	30 7	992	52 200
1896	10	18 6	1017	54 300
1897	9	16 2	1087	56 400
1898	11	18 8	1057	58 500
1899	20	33 1	1234	60 500
1900	11	17 6	1250	62 500
1901	12	18 5	1118	64 700
1902	11	16 5	1163	66 800
1903	22	31 9	1178	68 900
1904	10	14 1	1140	71 000
1905	14	19 0	1372	73 500
1906	15	19 6	1330	76,400

TABLE 2

*NUMBER OF DEATHS FROM TYPHOID FEVER REPORTED IN ALBANY DUR*ING THE NINE YEARS BEFORE AND SIX YEARS SINCE THE STARTING OF THE FILTER PLANT[1]

Deaths from Typhoid Before Filter Plant was Started		Deaths from Typhoid After Filter Plant was Started	
1890 1	97	1899 1900	39
1891 2	38	1900 1	27
1892	47	1901 2	19
1893 4	47	1902 3	22
1894 5	98	1903 4	24
1895 6	85	1904 5	12
1896 7	65		
1897 8	84		
1898 9	84		

While, as I have stated the actual hygienic efficiency of modern mechanical filters has not been as yet adequately demonstrated yet such efficiency is, I believe, undoubtedly obtained and will be demonstrated eventually There is a place for each type of filter Sand filters are successful with polluted but comparatively clear waters and with the addition of sedimentation basins and the occasional use of coagulants with waters somewhat turbid At the present time however no method of satisfactorily handling the very turbid waters full of clay and other matters in suspension is known other than by the use of coagulants and mechanical filters although sedimentation and double sand filtration is of much promise The prejudice in some minds against the use of aluminum sulphate under proper supervision is, I believe not justified, the aluminum hydrate formed is invariably removed by the filters if they are successfully operated We might perhaps, as well refuse to eat many common foods because in their production chemicals are used as to object to water clarified by coagulants The public is beginning to demand a clean water of good appearance, as well as safe, and in order to obtain such a water coagulants are sometimes necessary Before either type of filter is adopted, thorough preliminary studies of all the local conditions as to water supply, etc, should be made and hasty and inexpert conclusions prevented

TABLE 3

NUMBER OF DEATHS FROM TYPHOID FEVER AND RATE PER 100 000 POPULATION IN ALBANY AND NEIGHBORING CITIES[2]

	Albany	Cohoes	Troy	Water vliet	Sche nectady	Rens selaer
Population	100 000	24 000	75,000	14,300	56,000	10,000
Number of deaths yearly from typhoid	12	13	32	6	11	5
Rate per 100,000	12	54	43	42	20	50

THE PELVIC ARTICULATIONS

A CONSIDERATION OF THEIR ANATOMIC, PHYSIOLOGIC, OBSTETRIC AND GENERAL SURGICAL IMPORTANCE *

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The first paper on this subject was published by me in conjunction with Dr Robert B Osgood[1] in May, 1905 A second paper now seems justified, since as the result of a larger experience many features of the subject are better understood, and it is possible to write with greater definiteness than was the case two years ago

In the first place, in the consideration of the subject, it is to be remembered that the pelvic articulations are true joints and that in normal health, entirely irrespective of age or sex, motion is a definite part of their function In the next place, it should be remembered that because of the character of these articulations, being flat bone surfaces brought together with oblique or vertical axes, their stability is dependent on the tone *and character of the muscles and ligaments* This being the case, and it being recognized that all of the strong trunk and abdominal muscles, as well as the muscles involved in the movements of the thighs are attached to the pelvic girdle, it is evident that anything that interferes with the stability of the pelvis, or that which represents the structural base, must interfere with the normal use and development of the muscles attached to it The converse of this is equally true, and anything that interferes with the normal use or development of the muscles in this region must result in weakness and lack of stability in these joints, so that after the condition has once started a vicious circle exists, the full significance of which must be recognized if the various features are to be understood and the appropriate treatment given This, together with the effect which the unstable pelvis, associated with the weakened trunk muscles must have on the support and function of many of the abdominal organs, is to be recognized, and should it seems to me be given special emphasis in a paper presented before this Association

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[1] Compiled from records of Bureau of Health and State Board of Health

[2] From monthly bulletins of State Department of Health

* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty eighth Annual Session held at Atlantic City, June 1907

[1] Boston Medical and Surgical Journal, May 1905

ANATOMIC CONSIDERATIONS

From the anatomic point of view the joint between the pubic bones is vertical in its axis, the bone surfaces are narrow, and the muscles are so placed that they can give but little direct support, while the ligaments are such that great strength or stability is impossible. It is well known, as was shown in the previous article, that the pubic bones are frequently entirely absent, and that full activity, even to uncomplicated pregnancy, is possible under such conditions. On the other hand, the joints between the sacrum and ilia are broad and flat, with strong ligaments and muscular attachments, so that in their anatomic formation strength is at once apparent. The axes of these joints are oblique, in two directions inclining upward and outward, as well as forward and outward, a fact that naturally adds strength, but which is also of much importance from an obstetric point of view. It is evident from a thorough study of these joints that the stability of the pelvic girdle depends almost entirely on them and that motion at the pubes is practically impossible except as there is relaxation or motion at the back. The motions which are normal and which should exist at all ages and in either sex, unless some pathologic condition or congenital defect be present, consist at the pubic articulation in simply an up-and-down play, this being markedly exaggerated in certain physiologic conditions, but only as there is a corresponding exaggeration at the sacroiliac joints. In these latter joints the normal motion consists in the tilting of the sacrum on the ilia (or the ilia on the sacrum), the motion taking place on a transverse axis situated about in the middle of the sacrum. Because of the position of this axis it is obvious that as the upper part of the sacrum moves forward the lower part moves backward, and vice versa.

PHYSIOLOGIC CONSIDERATIONS

The effects of certain physiologic conditions on these articulations is of importance. In pregnancy a definite, and commonly a measurable, relaxation takes place as a normal feature, and while this becomes more marked toward the end of the term, it may nevertheless be present during the entire period and be so marked as to cause great disability.

Not only is this true, but there is probably a physiologic relaxation at every menstrual period, which from a physiologic point of view represents a miniature pregnancy. This is naturally not very marked under ordinary conditions, but it may be enough to cause considerable disability as well as explain many of the backaches common at that time. The relaxation is certainly definite enough to justify the more careful avoidance, at such times, of those activities that would cause strain of these articulations, than would be necessary under other conditions.

Not only should these two conditions, that of the relaxation in connection with pregnancy and with menstruation, be recognized, but it is probable, after the study of a considerable number of cases in connection with the gynecologists, that any disease of the pelvic organs in which there is much circulatory disturbance may be followed by this same reflex relaxation of the pelvic joints.

While this is probably true, the converse of this is also true, that if the pelvic joints become relaxed as the result of accident or disease, the lack of stability of the pelvic girdle, with the resulting weakening of the support of the pelvic organs, leads to congestive disturbances in these organs, and as this in turn probably acts on the joints, there exists, until the proper treatment can be instituted, a vicious circle of cause and effect.

OBSTETRIC CONSIDERATIONS

From the obstetric point of view the pelvic joints are of importance, and recognizing that there is motion in these joints and that during pregnancy this motion is increased, a knowledge of the character of the motion is desirable.

The most important feature is the tilting or movement of the sacrum on the ilia (or the ilia on the sacrum), and because of the double obliquity of the axes of the joints between these bones, it is necessary, if the sacrum is moved backward at the top, that not only should the antero posterior diameter at the brim of the pelvis be increased, but the lateral diameter must also be increased. As, however, all of these motions are made on the transverse axis through the middle of the sacrum, it is necessary that, as the bones are moved in such a way that the diameters at the brim of the pelvis are enlarged, the diameters at the lower portion, or the outlet of the pelvis, must at the same time be *reduced*. If this motion be reversed so that the sacrum moves forward at the top the diameters at the brim are all narrowed, while those at the outlet are correspondingly increased.

The importance of the possibility of modifying these diameters is at once apparent, and the ease with which this can be accomplished should be understood. Pressure on the end of the sacrum forces the lower part of this bone forward, thus narrowing the diameters below but enlarging those above. Pressure over the base of the sacrum or over the low lumbar spine forces the sacrum forward, thus narrowing the diameters above while at the same time enlarging them below. Under ordinary conditions the amount of pressure necessary to accomplish this is easily compatible with that which could be borne by the patient and which could be applied by the accoucheur.

It is still further to be remembered that as all of the trunk and abdominal muscles are attached to the pelvis, these muscles can be of little assistance at the time of delivery if the pelvic relaxation is much in excess of normal unless some support is applied that will prevent this undue motion and make the basal attachment of these muscles secure. To accomplish this a belt carried around the body over the trochanters and sides of the ilia is the simplest and most practical form of support.

GENERAL CONSIDERATIONS

When once it is recognized, in the consideration of the pelvic articulations, that we are dealing with true joints, it is evident that they are liable to the same disease conditions as are the other joints. That a tuberculous process may be present has long been recognized; but beside this, any of the non-tuberculous affections, the infectious arthritis, the atrophic arthritis, the hypertrophic arthritis, or the malignant diseases, may be present, the symptoms depending on the special disease present in the given case.

Not only are these articulations liable to disease, but because of their character, they are more liable to injury than any of the other articulations. Their obliquity, the lack of bony projections or formations that would tend to prevent strain or injury, such as the shape of the acetabulum in the hip joint, both emphasize the fact that the stability of the pelvis depends almost entirely on the ligaments and muscles This being the case anything that leads to loss in the tone of these structures renders the joints more liable to strain and explains the frequency with which these conditions are met

The simplest type of trouble consists of the strains of the sacroiliac joints which result from postures such as stooping, standing, lying, or sitting In stooping, the muscles at first protect the joints, but as they tire the support is then thrown on the ligaments, and if continued leads to sufficient strain of these structures to produce discomfort This is usually instinctively relieved by stretching, in the act of which the lumbar spine is drawn forward or hyperextended, and the sacrum, moving with the spine, is drawn into its normal position, and the strain relieved

In long standing the joint strain is similarly produced, except that the line of strain is downward, and is relieved by change of position, in which other muscles are used On lying down in the supine position, or dorsal decubitus, strain of these joints is also possible, the spinal muscles soon tire, and as they relax the lumbar spine sags With this downward movement of the spine the upper part of the sacrum is drawn downward also, the movement with reference to the pelvis being backward at the top or base and forward at the tip If this position is continued for any length of time the drag on the ligaments results in distinct strain, with the common backache This is naturally seen most markedly where, as the result of the large size of the buttocks or other physical peculiarities, the amount of depression of the spine, with the consequent drag on the sacroiliac ligaments, is greater than the average It is also more marked when for any reason the support and protection of the muscles is more completely eliminated than is usual with simple recumbency In this way the common postoperative backache is to be explained the complete relaxation of the muscles from the anesthesia allowing the maximum amount of sag, together with the fact that at such times the patient usually lies on a hard, unyielding table, without opportunity for the buttocks to settle into it as they do, in varying degrees, into the mattress or surface of the ordinary bed It is also in this way that the troublesome backaches occurring in connection with the acute sicknesses are to be explained, where as the result of the general disease the muscles are more relaxed than normal while at the same time the position is commonly on the back

A similar condition of strain results from long sitting especially if the body is not held reasonably erect The common lounging attitude in sitting, if continued, results in strain entirely similar to that seen in recumbency and explains the backache seen under these conditions especially common after long car journeys, the common car seat predisposing to such attitudes, while the few opportunities for change of position assist in favoring this strain

In all of these conditions which have been described the symptoms are due simply to strain of the joint structures No actual injury has taken place, and as soon as the position of strain is corrected the symptoms disappear If however the position of strain is continued, the ligaments either give way allowing the bones to become misplaced causing a true sprain or gradually become relaxed, producing greater instability of the joints, with or without misplacement of the bones but always causing weakness and instability In this latter type the condition can best be described as a chronic strain

Of these two types, the first is most often seen in the so-called "stitch" or crick in the back, coming on after long stooping or standing in awkward positions, or in lifting or straining, especially where the load is suddenly increased Under these conditions the sharp, sudden pain, usually referred to the lower part of the back and frequently definitely to one of the sacroiliac articulations, is due to the rupture of some of the ligaments of these joints, and as this allows a greater range of motion than is normal, a partial luxation at times results In this there is of course, very rarely an entire separation of the apposing articular surfaces, a complete dislocation, but the bones slip enough so that their normal relation is disturbed, with a corresponding disturbance in the normal function of the part Frequently this is corrected simply by the muscular effort in assuming the erect position, but at other times the irregularities which form the surface of the articulation are caught in the irregularities of the surface of the apposing bone, and voluntary correction becomes impossible

Because of the character of these articulations it is evident that if one joint is injured each of the other joints must be somewhat strained, so that the disability resulting from even a slight luxation of one of the sacroiliac joints at times is very great The attachment of the thigh and trunk muscles to the pelvic bones explains the great disability that may result from such an injury

In such an injury not only are the joint structures injured or strained, but the large nerve trunks which cross this articulation in front are frequently strained or irritated with resulting symptoms Anatomically the sacral plexus with some of the branches from the lumbar plexus cross just in front of the synchondroses and this being the case, it is not difficult to understand the fact that irritation of these nerves is possible The symptoms resulting from such irritation naturally vary, depending on the special nerve irritated and the degree of irritation, but it must be remembered that the pain or disturbed sensation will be referred to the distribution of the nerve irritated and not to the seat of the injury In this way the so-called referred pains, the areas of anesthesia or hyperesthesia so often seen, or the obstinate sciaticas, are to be explained, and the hopelessness of treatment applied to the seat of the pain is evident

The displacement most often seen is backward of the upper portion of the sacrum on the ilium In the acute injuries or disease conditions this is usually seen only on one side, while the chronic strains or the cases in which there is long-standing relaxation the displacement is usually on both sides, resulting in the flat back seen commonly in these cases With the acute cases, while the usual displacement is of the sacrum backward, the reverse of this is possible, the upper part of the sacrum being drawn forward on the ilium It is also probable that in rare instances, especially as the result of falls from heights striking on the feet, that the sacrum is forced downward, so that the ilium is made actually higher, with the apparent shortening of the leg It is in these cases of injury or of disease on one side that the lateral deviations of the trunk are seen It is also in these one-sided lesions in which the referred pains are met most frequently In the chronic relaxations apparently the changes take place so slowly that the nerve trunks become adjusted to the changes as they take place, so that referred pains are less common. It is to be remembered that the displacement of the bones which results in this nerve irritation may be produced by disease of the joints or by traumatism, and in either the pain may vary from slight twinges to most intense suffering. If the irritation is continued for any length of time the muscles supplied by these nerves may become atrophied, a fact that frequently shows by measurement, but which is very noticeable to the feel.

In the pelvic joints as in the other joints it is to be remembered that the joint weakness which results from the common injuries or long continued strains predisposes to disease which probably would not develop otherwise. This is undoubtedly true of any of the infectious processes, either the tubercular or the non-tubercular, and it is certainly true that continued strain or injury leads to the development of the hypertrophic arthritis (osteo arthritis), which in many instances results in the complete ankylosis of the joint.

Of the special disease conditions most often met in these joints, the infectious processes are the most common, and of these the tuberculous is less frequent than the non-tuberculous. Of the non-tuberculous infections, any of a large number of organisms may apparently produce the local conditions, being part of a polyarticular process or confined entirely to this region. The course of the disease in the given case must naturally depend on the particular organism that is present or on the degree of virulence shown by this organism. The symptoms may be mild, with no ultimate impairment of the joint function, or they may be very severe, with actual bone destruction, with much suffering, and with much disability.

CONSIDERATION OF THE PELVIC JOINTS IN CONNECTION WITH THE SUPPORT OF THE ABDOMINAL AND PELVIC VISCERA

The importance of the stability of the pelvic joints in connection with the proper support of the abdominal and pelvic viscera has been mentioned earlier in the paper. It is, however, my wish at this time to emphasize this feature more definitely, since an understanding of it suggests the explanation of many conditions about which there has, at least, been uncertainty, and at the same time suggest treatment for the relief of symptoms now not satisfactorily controlled.

The viscera are held in position naturally by ligaments or structures which, while perhaps not so designated, are nevertheless ligaments in point of practical function, by muscles, and by the direct support which one organ from its bulk or structure may give another. In the first place, of these the muscular support is undoubtedly the most important. The tone of the ligaments naturally depends largely on the tone of the muscles, since that which stimulates one must stimulate the other, and also because that which lessens the muscle tone leads to increased strain on the ligaments, this in turn, if continued, leading to weakness of the structures strained. In the second place, the muscles are of importance not only by furnishing firm abdominal walls, thus preventing the sag of the viscera and leading to the weakness and relaxation of the ligaments, but are of quite as much importance in making it possible to hold the body in such attitudes that there is the least possible tendency to visceral sag with the ligamentous strain. It is evident at once that when the body is erect with the muscles in good tone, in which the abdominal walls are firm and comparatively flat, that the viscera, the stomach, the liver, the intestines, the kidneys, in fact all the viscera, are causing the minimum amount of sag and producing the minimum amount of ligamentous strain. It is equally evident in the attitudes seen invariably in those who are poorly developed that there must be more drag on the ligaments, with consequently an increasing tendency for this drag to become more marked. The mere character of the attitudes, all of which are attitudes of muscle fatigue and in all of which there is the droop of the body forward, the organs sag more and drag forward, pulling directly away from their attachments. With the body erect and being held, as so many of these organs are, against the spine or back of the abdomen, this wall actually holds them in place to a certain degree, entirely apart from the ligamentous support, so that the amount of ligamentous strain is comparatively slight.

If this is true, and there can, it seems to me, be little question if the subject is carefully considered, especially if at the same time the results of the ordinary treatment of the loose or misplaced viscera are also considered, then the condition of the general muscle tone becomes of more importance than has been commonly held. It must be remembered that strain, relaxation, or disease of the pelvic joints must be followed by weakness and relaxation of the muscles attached to the bones making up the pelvis. It must also be remembered, as has been previously explained, that weakness of the muscles attached to these bones necessarily leads to weakness of the pelvic joints, so that strain and relaxation frequently take place.

If these two conditions are recognized, so that in whatever treatment may be decided on, whether surgical or medical, the stability of the joints is also recognized and appropriately treated, I fully believe that there will be a much smaller number of patients, than exist at present, who are unrelieved even after long and often heroic treatment for conditions in which the viscera are loose or misplaced. I do not naturally believe that the joint condition is responsible for all of the cases of visceral displacement and relaxation, with all their neurasthenic manifestations, but I do believe that either condition may lead to the other and that when once started there exists a vicious circle of cause and effect which makes it difficult to relieve unless both are recognized. Joint support and improvement in the muscle tone may not alone relieve the many symptoms present in such cases any more than does surgery by itself often relieve such cases, but if the problem is faced from both points of view I believe most fully that unless some actual disease is shown to be present (which, of course, is rarely the case), the relief of this large class of patients is simple and definite, and will not in the future represent the reproach to the profession that it does at the present time.

SYMPTOMS

The symptoms on which a diagnosis of disease or weakness of the pelvic joints is to be based vary considerably, but certain ones are practically always present, and if properly interpreted should make its recognition easy. The most common symptom is the limitation of motion, and this in itself is usually very suggestive.

Pain.—Aside from the limitation of motion, pain, which may be localized at the seat of the disease or referred to the leg or foot, is the most important symptom. The referred pains may extend the length of the leg or may be referred to definite areas in the upper or lower leg or the foot. They are definitely increased by motions which result in strain of the affected joints, but are not increased by pressure along the course of the nerves, as would be true with a neuritis. The pain is almost always worse at night, because of the strain on the pelvic joints which results from recumbency, but is relieved by changes of position which overcome this strain, and is prevented by postures in which this strain is not present. In the day time it is not apt to be present unless the joints are strained, as may result after long sitting, standing, stair climbing, stooping, etc. It is always worse in one leg, but may be present in both. The local pain when present may be referred definitely to the sacroiliac joints, but more often to the sacral region. This is made worse by anything that results in strain of these joints, and in women is worse at the menstrual period, because of the increased mobility of the joints at that time and consequently the greater possibility of joint strain. Recumbency, long sitting, or standing increases the pain because of the strain of these joints possible at such times.

With children the pains usually take the form of leg-ache or backache, rarely being acute and while they may be present during the day and interfere with the normal activities, they are almost always present at night, awakening the child, and are often supposed to be growing pains or confused with the night cries and pains met with in disease of the spine or hip.

Swelling.—At times, usually in connection with the infectious processes, the sacroiliac joints are swollen sufficiently so that the swelling is visible and can be palpated. The character of the swelling will depend on the nature of the lesion. If tuberculous, there is usually considerable infiltration of the tissues without definite fluctuation, unless the process is so far advanced as to result in abscess formation. With this there is also to be expected considerable atrophy of the buttock, and this, with the history and slow onset, is usually enough to make the nature of the process clear. With the non-tuberculous processes the infiltration is less, and there can sometimes be made out a distinct sense of fluctuation. The muscular atrophy is slight, and this, together with the more acute onset and the usual involvement of some of the other joints, should make differentiation possible.

Abnormal Mobility.—While in lesions of the pelvic joints there is almost invariably limitation of some of the motions, there also, in certain cases, is an increase of the normal motion. This increase will naturally be seen chiefly in the cases in which, as the result of long continued strain, the joints are much relaxed. To determine this various tests may be made. Forced hyperextension of the thighs, one at a time, thus moving the ilia on the sacrum, may be sufficient. At other times with the patient standing if one hand is held over the sacrum and the pubic bones are held between the thumb and finger of the other hand and the patient now raises first one knee and then the other, the motion is often quite distinct. Again if the crests of the ilia are grasped with the two hands, the thumbs resting on the sacrum and the patient raises the legs as above the mobility is also often apparent. Another method is to have the patient lie down and raise first one leg and then the other with the knee straight. With one or all of these the mobility is usually apparent, but it is to be borne in mind that while there is an abnormal amount of motion under certain conditions there is also in these very cases under other tests, definite limitation of motion.

Attitudes on Standing or Walking.—Disease or weakness of the sacroiliac joints frequently results in peculiarities in the use of the body that are suggestive. When standing the body is usually inclined away from the joint chiefly affected. In rising, the spine is usually held rigid, and the hands are frequently used for support. In stooping, the flexion of the trunk is avoided. In walking, the motions are made guardedly if the condition is at all acute, or if the joints are much relaxed the gait is rolling or even waddling as the result of this pelvic instability. If the condition be acute, a long step in walking is impossible, owing to the spasm of the hamstring muscles, produced where the knee is straightened with the thigh flexed. In lifting the weight with the knee bent, as in stair climbing or rising from the sitting posture, the discomfort is increased, and the hands are frequently used for support.

Limitation of Motion.—In any event, if the sacroiliac joints are strained or diseased, motion of the body which causes strain of these joints is limited involuntarily, as is true in the disease of other joints. With the sacroiliac joints, the limitation may show by motions of the body on the thighs or by the motions of the thighs on the body. In the first place, forward bending of the body with the knees straight will be limited if the lesion is one of any magnitude, since as soon as the hamstring muscles become tight, the motion which up to that point had been made largely in the hip and spine is then made by the sacroiliac joints and the spine. When this point is reached the spinal and trunk muscles contract reflexly to protect the irritated joint, and the motions are restricted. To determine whether this limitation of motion is due to disease of the spine or to the sacroiliac joints, the tension of the hamstring muscles should be released, and this is most easily accomplished by the patient being allowed to sit, and in this position the same motion tried. If the spine is involved the limitation will be present in this test as when standing. If the sacroiliac joints are at fault, however, the bending will be much more free, since with the hamstring muscles relaxed, the forward bending is performed almost entirely with the hips and the spine, the sacroiliac joints under such conditions being used only in the extremes of motion such as are rarely made. While the forward bending is limited when the patient is standing, the lateral bending is also limited. In this, as one side is usually more affected than the other, the bending to one side may be more free than to the other, and not only is this more free but it is usually made with different segments of the spine. While with the forward bending the change from standing to sitting makes a very noticeable difference in the motions, in the lateral bending this difference is not as marked, since in this the hamstring muscles play but little part. In backward bending the motions are usually guarded, while in the extreme cases the body may even be drawn forward so that it is not possible to assume the erect position, and under these conditions backward bending would naturally be entirely impossible.

Thus far in the consideration of the motions, the thighs are made the fixed point, and not only this, but the tests are made with the joints carrying the body weight. These same motions can be tested without the latter feature being present, by having the patient lie down and the thighs held fixed. In this way, if lying on the back, the forward bending can be tested by raising the body, and when on the face the amount of backward or lateral bending can also be determined.

After these tests have been made the leg motions should next be tried, the body, in this, becoming the fixed point The knee motions should be free and with the knee bent, the hip motions should be free and without pain except when the disease or lesion of the joint is very acute, at which times the extremes of motion, especially outward rotation with abduction, may be associated with pain referred to the sacroiliac joints In making these tests, while the hip motions are free as long as the knee is flexed, if the knee be straightened and then flexion of the thigh is attempted, the limitation will be definite In this position the hamstring muscles are stretched, and since these muscles are attached to the ischia, then any motion made in which they are tense as in the straight leg raising will result in the innominate bone moving with the leg and in this way the motion and possible sensitiveness to the sacroiliac joints will be developed In any case in which there is definite disease or weakness of these joints, the straight leg raising will be limited, and not only is the motion limited, but attempt to carry it farther will develop pain which will be referred either directly to the sacral region or to the legs In applying this test, whenever there is trouble in one joint, not only will the straight leg raising on that side be limited, but also there will be a similar limitation in the other leg, although naturally not as marked This limitation on the opposite side is to be explained by the fact that in the motion made with the hamstring muscles tight the ilium on that side is moved, the sacrum naturally moving with it, and as the result of this movement of the sacrum the affected joint, although on the opposite side is strained Not only is this limitation of motion present on the side away from the lesion but the pain which is developed by this same test is referred to the seat of the disease or to the leg on the side affected so that whether one leg or the other is raised the pain is referred to the one on the side of the lesion These tests, which should be at first made passively, will be even more striking if attempted actively by the patient

TREATMENT

It is not the intent in this paper to enter into a detailed discussion of the various features involved in the treatment of the pelvic joint lesions The time is too short in the first place, and in the second place there is comparatively little new to be added to that which was described in the earlier paper already referred to At this time it is the purpose to simply state the principles which should represent the basis of the treatment, leaving the application of these principles to the discretion of the physician who may be responsible for the given case It must be remembered, and this should never be lost sight of, that the pelvic joints, being joints differ in regard to their treatment only, as would be determined by their anatomic or mechanical peculiarities If the joints are being strained, they should naturally be relieved from strain If they are diseased, the treatment would be such as would be indicated for that particular disease in any of the other joints

If the condition represents one of strain, whether acute or chronic, naturally the first consideration should be to protect the joints from strain, and, as the strain may be received under different conditions, in standing, in sitting or in lying down, all of these features must be taken into account. Long standing should be avoided, but in standing the body should be held erect so that the proper poise with the weight through the shoulders, hips, knees and ankles, is obtained In sitting the lounging attitudes should be avoided, and, if necessary, a support in the hollow of the back should be used to prevent the sag of the lower spine In lying, especially in the dorsal position, a support under the lumbar spine should be used also to prevent the sag to the back or sides

Frequently by relieving the attitudes of strain the symptoms are relieved and the condition is corrected, so that nothing further is needed At other times, however, while this relieves, it does not correct the trouble, and mechanical assistance for the support of the joints becomes necessary For this the adhesive plaster strapping applied across the lower back may be sufficient, or belts fitted to give support about the pelvis (avoiding pressure on the crests of the ilia) are often required, while at times more rigid or complicated forms of apparatus may be needed, but only as the simpler forms fail

In all of these conditions in which the symptoms are due to joint strain which is consequent almost always on the weakness of the muscles, it is to be recognized that, while mechanical supports may be necessary for a time in order to relieve the acute strain, these are nevertheless only palliative measures and do not correct the primary weakness To overcome this, special exercises (given so as not to cause strain of the weak joints), massage, stimulating bathing, etc, are of the utmost importance and should be continued until every evidence of the weakness has passed

If the symptoms are due to disease, the nature of the disease should, of course, be determined first, and then such treatment applied as would be consistent with the special disease present If tuberculosis, the joints should naturally be protected so as to avoid painful use, and for this the stiff jackets are most often satisfactory If inflammatory processes, due to other organisms than the tubercular, the so-called infectious arthritis, the joints should also be protected so as to avoid painful use, and for this all varieties from simple firm bandages covering the lower body and thighs, to the rigid jackets, may be required

If the hypertrophic arthritis (formerly called osteoarthritis) is present, the joints should be protected, as is true with the same process in other joints

At times the symptoms are due to the displacement of the bones, and when this is the case naturally, supports, no matter how perfectly they may be fitted, will fail to give relief Under such conditions the position of the bones should be corrected, and, as the malposition does not often consist in more than the slight slipping of one ilium on the sacrum or sacrum on one or both ilia, this is not usually difficult and may be brought about in several ways At times simply hyperextending the spine, as would be produced by having the patient lie with a firm pillow under the "hollow of the back," may, by raising the lumbar spine, draw the sacrum into place. At other times the same thing may be accomplished by having the patient lie face downward with the thighs and legs supported on one table, and the head and shoulders on another, the body hanging entirely unsupported between. In this position the weight of the body drags the spine forward, thus favoring the replacement of the sacrum If this is successful, the plaster-of-Paris jacket, which may be considered advisable to hold the bones in place, may be applied before the patient is moved.

At times more definite pressure over the sacrum apparently is needed, and for this the frame which is in common use for the application of plaster-of-Paris jackets in the hyperextended position in cases of Pott's disease works admirably. In using this the flexible rods, which conform to the shape of the back, should be bent with a sharp curve low down, so that the greatest pressure is on the upper part of the sacrum and the low lumbar spine. In this position the weight of the body tends to force the sacrum forward, with frequently sudden marked relief as the bones slip into place. While in this position, the plaster-of-Paris jacket should be applied, the steels being removed when the jacket is thoroughly hard.

If these procedures are not successful, an attempt should be made to manipulate the ilium on the sacrum and thus effect the replacement. For this the patient should lie on the side, and with one hand gripping the ischium, while the other holds the iliac crest, the bone is moved on the sacrum either forward at the top or the reverse depending on the character of the luxation.

In case none of these methods are successful, an anesthetic should be used so that the muscular relaxation is complete, and an attempt then made to overcome the difficulty. For this either of the above procedures may be used but that which is most reliable consists in flexing the thigh, with the knee straight, so that the hamstring muscles are tight, to at least a right angle with the straight line of the body. If the displacement of the sacrum is backward, this manipulation will result in slipping the ilium backward on the sacrum and consequently into place. If the position of the bones is reversed the patient should lie on the face or side, and the thigh is drawn backward, the innominate bone moving with the femur because of the attachment of the Y ligament, so that the ileum is moved forward on the sacrum.

After the bones are once in place, they should be held by means of some fixed support, and for this purpose the plaster-of-Paris jacket is probably the best. This should be fitted well down over the buttocks and the trochanters, so that the pelvic bones as well as the spine, are held.

Naturally from what has been said earlier in the paper if disturbances of the pelvic or abdominal organs, such as could cause reflex relaxation of the pelvic joints, are present, these should be corrected before that which could more properly be called the joint treatment is undertaken.

PROGNOSIS

The length of time required for treatment in a given case depends on many things. In a wrench or strain without much displacement of the bones, strapping for three or four weeks followed by a belt for a few weeks longer may be all that is necessary. If the condition still represents an injury only more severe the treatment must be kept up for a longer period, the duration and the completeness of the fixation depending on the severity of the injury. It should always be remembered in such cases that as the sacrum and ilia are held in place almost entirely by ligaments and muscles without bone sockets or other supports the treatment should be continued for a considerably longer time and more attention paid to improving the tone of these structures than is considered necessary in other articulations where the ligamentous support is less important.

In the cases in which the symptoms are due to hypertrophic arthritis tuberculosis or other inflammatory processes the condition in these articulations should be treated in the same manner as a like condition in any of the other joints. The protection should be more complete than is necessary in the cases of strain, but the form of support is to be determined by the given case.

In the relaxed cases associated with pregnancy the patient may be allowed up with some form of support in three weeks after delivery, and the support should be worn until two or three menstrual periods have passed without trouble. If nursing prevents the menstruation the support should be worn for at least three months.

In some of the relaxed cases associated with menstruation without pregnancy or which are part of a general relaxation, it may be necessary to wear some form of support for an indefinite period.

In the cases in which the weakness has been associated with menstruation or in which the weakness has followed pregnancy and gone on untreated, in case pregnancy should again occur, if the bones are properly supported during that period, benefit will result. The acute congestion of the joints occurring at such a time will act, as acute congestion in other chronic joint conditions acts, to stimulate more complete and more rapid repair.

Clinical Notes

SPIROCHETES IN HODGKIN'S DISEASE

PRELIMINARY COMMUNICATION

WILLIAM CHARLES WHITE, M.D.
PITTSBURG, PA.

Having noticed the frequency with which spirochetal infections are attracted to the lymphatic tissue, for example *Spirochæta pallida* to lymph glands, *Spirochæta obermeieri* to the spleen, and knowing the frequency with which spirillar forms are present in the mouth and familiar with the frequent history of enlarged tonsils preceding Hodgkin's disease, I was tempted to apply the specific stains for spirochetes to the glands in Hodgkin's disease.

This seemed the more likely to give results by coupling the observation of the peculiar giant cell formation described by Reed and by Longcope in the glands of Hodgkin's disease with the observation of Benda that the giant cell formation in syphilitic children's livers was made up of pale spirochetes.

With these thoughts in mind, I sent to a number of laboratories a request for glands of Hodgkin's disease which had been hardened in formalin. Dr. W. G. MacCallam, of Johns Hopkins, Baltimore, was the only one from whom I could obtain such, but from him I obtained two typical Hodgkin's glands.

The first of these I stained by Levaditi's method, the technic of which I owe to the kindness of Dr. H. R. Gaylord, of Buffalo. The result from this was surprising. The sections of the gland presented innumerable spirochetes. I next stained the other gland which came imbedded in paraffin with Giemsa's stain. This was not so successful in acuteness of stain, but showed very many spirochetes in these sections also.

I was not satisfied with my own observation, and submitted the sections to Dr. Fr. Proscher, a former assistant of Ehrlich now pathologist at the Allegheny General Hospital here. Dr. Proscher has been familiar with the spirochete for a number of years. He had no idea of my thought in the matter and at once pronounced it a syphilitic gland remarking however that he had never seen so many spirochetes in luetic tissue.

I next stained sections in iron hematoxylin and eosin and was surprised to find the organism stained a deep black with this stain within the blood vessels Dr Proscher also identified these, but always insisted that they were pale spirochetes

Two facts, however, are positive

First—The glands which Dr MacCallam sent me were diagnosed as Hodgkin's disease and conformed in every way to the histologic structure described so carefully by Reed and later by Longcope for this affection, the uninuclear and multinuclear giant cells and abundant eosinophile cells with the increased reticulum all being present in the sections

Second—There were in the sections of these glands tremendous numbers of spirochetes which stained readily with Levaditi's silver method, with Giemsa's method and with iron hematoxylin The Levaditi sections gave a beautiful counterstain with toluidin blue

The spirochetes were in the blood vessels among the cells and at times within the cells In a later paper I will furnish drawings of these sections and a fuller description of the findings The presence of the organisms within the blood vessels would indicate that they should be found in the blood stream of these cases during life It is not possible that they were in any way accidental, their tremendous numbers quite precluded this

Three possibilities are presented by these conditions 1 either the spirochetes were the etiologic factor in the enlargement of these Hodgkin's glands, or, 2, the glands were infected secondarily with *Spirochæta pallida*, or, 3, Hodgkin's disease may be a mild form of lues, as tuberculous glands are a mild form of tuberculosis

My excuse for publishing this incomplete report is that my present work excludes my seeing or having the opportunity of studying other cases of Hodgkin's disease My time is taken up fully with organization directed against tuberculosis in this city, and I have little time at disposal for the pursuance of this work further at this time It seems, however, so positive a result that if it be true that spirochetes are a factor in Hodgkin's disease other cases examined in this way should give a similar result, and in the hands of observers with material at their disposal the truth or falsity of the relation can be more easily determined

I wish to thank Dr W A Gekler, my assistant, for his work in preparing the sections and Dr Proscher for his help and advice

VAGINAL HEMORRHAGE IN THE NEW-BORN

FRANK I. DRAKE, M D
MADISON WIS

Occurrences of vaginal hemorrhage of the new-born are sufficiently rare to warrant my reporting the following case

History—Baby D was born Sunday morning, June 23, 1907, after a normal confinement of three and one-half hours' duration When three days old her nurse noticed a tinge of red on her diaper The day following, on inspecting the vulva, I noticed blood at the vaginal orifice and wiped away several drops with a pledget of absorbent cotton The flow remained constant for two days, then gradually diminished in amount and ceased spontaneously June 30 Between one and two drams would be a fair estimate of the total amount of blood lost

The infant was normal in every respect, weighing at birth 7½ pounds She is the fourth child in a family of robust children She comes of a remarkably healthy ancestral line—neither syphilis tuberculosis nor any blood dyscrasia appearing as a possible etiologic factor in this disease There was no history of trauma The stump did not bleed when the cord separated on the eighth day—the time that the vaginal hemorrhage ceased The baby is now six weeks old and there has been no recurrence of the hemorrhage Precocious menstruation is thereby excluded

In the light of our present knowledge the etiology of spontaneous vaginal hemorrhage of the new-born must be sought, as Holt points out, in the change of the character of the blood itself and in the radical change in the circulation of the blood produced by ligation of the cord

SIMPLE METHOD OF RETAINING THE ANESTHETIC MASK IN PLACE

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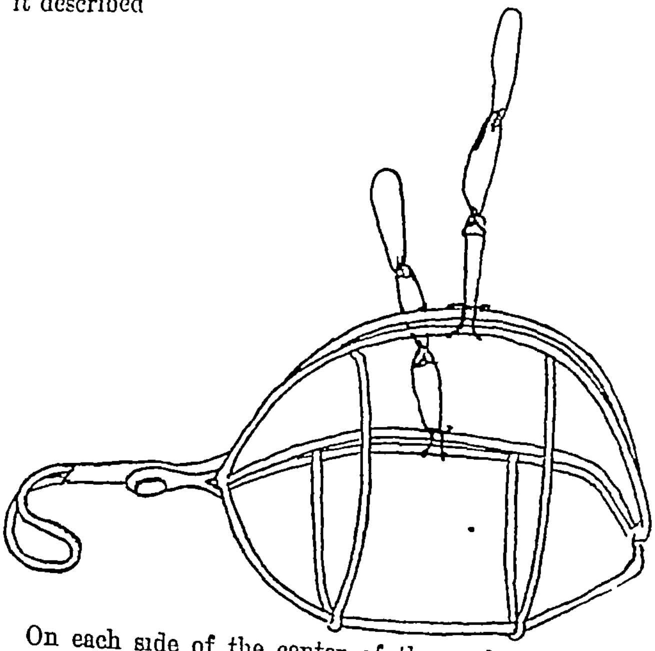
AULT, COLO

On reading a recent article in THE JOURNAL I was reminded of a simple appliance which can be used to hold any kind of an anesthetic mask in place I make no claim for originality, but do not remember to have seen it described



On each side of the center of the oval base wire of say the ordinary Esmarch mask, loop two or three small rubber bands, end to end, and pass the last ones around the patient's ears The tension should be slight—just enough to keep the mask in place The curved handle is better turned toward the chin, then the mask can be raised like a trap door to regulate the air supply or to allow access to the mouth With a struggling patient the advantages are obvious and it can be removed instantly, when desired, by a simple pull

The Best Bovine Wet Nurse—In an article with this title in the *Dietetic and Hygienic Gazette*, J A Gilbert, Portland, Ore, states that the milk of the Jersey cow is not suitable for infant feeding, as in that breed all else has been sacrificed to a milk rich in fat to be used in butter making He asserts that Holstein milk most nearly meets the requirements The fat globules are small and even sized, ensuring a stable emulsion slow churning, easy remiscibility, and ease of absorption. A milk like that of the Jersey, with large fat globules, churns easily and frequently globules of butter can be found in Jersey milk when it is delivered to the consumer Milk poor in fat is better for the young growing animal than a milk rich in fat A diet of milk with a great deal of fat destroys the appetite and disorganizes the digestion

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THE DEVELOPMENT OF A METHOD OF STUDY OF EXPERIMENTAL THERAPEUTICS

Although a vague appreciation of the fact that a therapeutic agent can act only on tissues with which it can combine has existed in medical thought since the earliest times, yet its proof and its application to therapeutic studies have been slow in coming One of the reasons for this tardy progress lies in the impossibility of observing exactly how ordinary therapeutic agents distribute themselves in the healthy and diseased body, a difficulty that has been partly overcome in studies of therapeutic substances that are readily visible to the investigator even when highly diluted, such as the dyes By introducing the "vital stains," that is, dyes which penetrate living cells without seriously injuring them, Ehrlich opened not only a new field of biologic investigation but also a new method for the study of experimental therapeutics In 1880, when he first urged the value of methylene blue as a stain for bacteria Landau suggested to him the propriety of using this substance as an internal antiseptic, but for a long time he could not pursuade himself to follow up this idea The subsequent observation of the power of this dye to enter the elements of living nervous tissue led to its application with some success as a means of reducing the pain of neuralgia, and later to the discovery of its effect in destroying malarial parasites

For many years Ehrlich did not follow up these experiments on the therapeutic application of dyes, feeling that without animal experiments nothing could be profitably done, but the study of trypanosome infections, which are readily transmitted to small laboratory animals gave the looked-for opportunity which was promptly taken advantage of The tremendous importance of trypanosome infections, both for human life and for economics in tropical and semi-tropical countries, added a special incentive to such investigations which have yielded at least two valuable trypanocides and which open the way to further studies of the possibilities of internal antisepsis As every one knows, what is desired above all things in medicine is a substance which will unite with bacteria and destroy them without at the same time uniting with and destroying the tissue cells, but as yet such a substance has not been produced in the laboratory Appreciating the fact that drugs must combine with the cells they are to affect we must seek some drug that has a greater affinity for the bacteria (bacteriotropic) than for the tissues (organotropic) The recent review by Ehrlich[1] of his experimental studies along this line is a classical example of the typical systematic, painstaking and thoroughly scientific German way of taking up a problem The method followed consisted in trying one by one great numbers of different organic substances on animals infected with trypanosomes, until at last one was found that showed some slight influence on the course of the infection by delaying the fatal termination some few days Having found such a substance the next step was to make in the chemical laboratory all sorts of modifications, trying each one on animals, until it was discovered what groups added to the effect of the drug, then by adding such groups in various positions in the molecule to secure the maximum of efficiency By such exact but laborious methods as this a substance was at last obtained that had positive curative effects on trypanosome infections in mice, and called "trypan red" (Trypanrot) Indeed, so efficient is this dye that it is often possible by a single dose to exterminate entirely the trypanosomes that have infected a mouse, without dangerously intoxicating the animal As might be expected of such a substance, its efficiency varies not only for different varieties of trypanosomes but also for different species of animals, hence the discovery of trypan red is only the beginning of these researches Already derivatives of trypan red have been made which have more effect on certain of the pathogenic trypanosomes than has trypan red itself Another investigator, Wendelstadt, has observed that a certain other class of dyes, malachite green and brilliant green, are efficient against certain varieties of trypanosomes, and Ehrlich has developed an effective trypanocide in parafuchsin which may be administered by mouth Atoxyl, an organic arsenic compound which has been found of great practical value in the trypanosome diseases of Africa by the workers of the Liverpool School of Tropical Medicine and the value of which has been corroborated by Koch, is of different chemical nature from the dye stuffs mentioned above

An interesting and important observation made by Ehrlich concerns the development of immunity by the trypanosomes against the various drugs mentioned above It was found that if not all the trypanosomes were killed in an animal by a single dose of fuchsin, the survivors begin to multiply after a time, and although decreased in number by subsequent administration of the drug, yet after a time the parasites are not at all affected by fuchsin and increase until the animal is killed, even when it may be thoroughly saturated with fuchsin If parasites from such an animal are transplanted to another animal they are found to retain this resistance to fuchsin although they are not resistant to atoxyl or to trypan red Similar strains of parasites immune to trypan red or to atoxyl can be obtained in the same manner. To the American reader this observation recalls Welch's pregnant suggestion that bacteria become immune to their hosts or to special tissues or fluids of their host just as readily as the host or his tissues become immune to the bacteria, for here Ehrlich finds a specific resistance on the part of a pathogenic protozoon to a toxic drug to which it has been repeatedly exposed. The existence of such a specific immunity on the part of the trypanosomes may be taken as evidence that the trypanocidal substances must each combine with some specific chemical group in the protoplasm of the parasite. Such immunized trypanosomes retain this acquired property through many generations after being transplanted to normal animals, a fact of great practical importance, for, as Ehrlich suggests, trypanosomes derived from persons under treatment with atoxyl may show themselves resistant to this drug when growing in a new host, and thus races of trypanosomes immune to atoxyl and the other remedies may be developed. Fortunately this immunity is strictly specific, so that a strain of trypanosomes that resist atoxyl is readily killed by trypan red, and conversely.

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[1] Berl klin Wochschr 1907 Nos 9 12

As there seem to be natural differences in the susceptibility of trypanosomes to the different drugs, we have an explanation of why Laveran and others have had the greatest therapeutic success with combined treatment by both atoxyl and trypan red. To avoid the development of strains of trypanosomes that are not susceptible to the drugs commonly used, Ehrlich urges that the medication in each case should be pushed hard at the beginning to destroy completely all the trypanosomes at once, if possible, without their having an opportunity to acquire resistance to the drug.

THE VIBRATING SENSATION IN DIAGNOSIS

As the science of medicine grows older and the number of workers in the field of medical inquiry increases, new methods of diagnosis are constantly being added or old methods are modified. In some instances the tests of time and of independent investigation show that a new diagnostic method is not so pathognomonic as its originator thought, but under these circumstances it often happens that the method is still found to have value as a corroborator of other methods and serves as a link in a diagnostic chain of evidence. Among the new tests which have been used in Europe for some time, but have not been especially noted in this country is the so called vibrating sensation, sometimes spoken of as "bone sensibility" or as "pallesthesia."

If the foot of a tuning fork of a certain size is placed over subcutaneous bony prominences or surfaces a peculiar vibrating sensation is felt by normal individuals, and it is to this that the name "vibrating sensation" has been given. It seems that in order to produce the sensation the tuning fork must have a certain size and amplitude of vibration. Certain European authorities have had special tuning forks constructed, but this is not necessary, according to Williamson,[1] who states that a fork nine inches long with prongs five and a half inches long will suffice. The vibrating sensation is best tested at certain points, and if it is used as a routine test the same points should always be selected. The places best suited for the test are: The styloid process of the ulna, the external and internal malleoli, the inner surface of the shaft of the tibia, the anterior superior spines of the ilia, the sternum, the palms of the hands over the heads of the metacarpal bones, the soles of the feet over the heels and the heads of the metatarsal bones, and the nails of the fingers and thumb and the big toe.

The results from investigations of the test seem to show that it is of particular value in the early stages of certain diseases which are accompanied by loss of cutaneous sensibility, its greatest advantage lying in the fact that the vibrating sensation is often lost before changes in the ordinary sensibility can be made out. For this reason the test should be employed in patients suspected of having early tabes or peripheral neuritis. Investigation has also shown that in some instances in which nervous symptoms are not usually prominent, diabetes for example, changes in the vibrating sensation are rather common. It has long been known that in a small percentage of patients with diabetes mellitus changes occur in the cord similar to those found in pernicious anemia, but Williamson's researches seem to indicate that signs of less marked spinal changes are common in diabetes. He found frequently in this disease loss of vibrating sensation in the legs, often accompanied by pain and tenderness and loss of the Achilles jerk. In beginning paraplegia from spinal caries, and occasionally in patients with spinal syphilis, the loss of the vibrating sensation may be the first objective sign to appear. In diseases of the spinal cord strictly limited to the motor regions the vibrating sensation is not lost, even at an advanced stage of the disease. In the differentiation of organic and hysterical hemianesthesia the test may be of great value, for in the case of organic hemianesthesia the tuning fork placed on the sternum on the anesthetic side still causes the vibrating sensation, while in hysterical hemianesthesia the vibrating sensation is not felt on the anesthetic side, but is transmitted to the sound one. It would seem that the test for the vibrating sensation might be a valuable corroborative procedure in many nervous diseases, and may, in some diseases, allow of diagnosis at any earlier date than is at present possible.

MORPHIN AND THE ALIMENTARY CANAL

The influence of morphin on the motor function of the gastrointestinal tract has long been a disputed point. In the human subject, the effect of morphin is usually seen in constipation, although in the non-habituated, as well as in the dog, the cat and the rabbit, diarrhea may be provoked. According to Nothnagel, this result is brought about by the action of the drug on a spinal center, small doses stimulating the inhibitory mechanism and large doses paralyzing it. Other writers contend that the morphin acts directly on the intestinal wall, while still others believe that the action is partly central and partly peripheral. Several observers have investigated the influence of morphin on the action of the stomach. Batelli reports that the gastric movements are at first stimulated and later inhibited. Hirsch who studied the gastric movements of a dog through a duodenal fistula, states that the evacuation of the stomach is delayed by a spasmodic contraction of the pylorus. Riegel has shown that morphin produces hypersecretion and hyperchlorhydria.

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[1] Brit. Med. Jour., July 20, 1907.

The most recent work on this subject may be found in the investigations of Magnus,[1] who, while he has not succeeded in simplifying the problem, has demonstrated certain facts which should help to harmonize much of the apparently contradictory evidence now before us. The first step in the work of Magnus was to test the validity of Nothnagel's theory. To accomplish this, he operated on cats, carefully dividing the nerve plexuses about the celiac axis and superior mesenteric vessels from the solar ganglia and the hypogastric, the inferior mesenteric and the small ascending colic branches from the mesenteric ganglia, thus practically cutting off the sympathetic nerve supply of the stomach and intestine. Before proceeding with the experiment he allowed a period of at least seven days to elapse, in which time he was able to demonstrate a degeneration of the peripheral portion of the cut nerves. In cats thus treated he was able to control an artificially induced diarrhea with as little morphin as had been required for the same cats before the operation, thus proving that the sympathetic system is not a necessary factor in this action of morphin.

In his further studies on the nature of the changes brought about by morphin, Magnus made use of Cannon's method of studying the movements of the gastrointestinal tract. Cats were fed with twenty-five centimeters of potato gruel, containing five grams of bismuth, and were then observed by means of a fluoroscope. In the normal cat, the entire stomach could be outlined by the shadow of the bismuth, and in the course of about fifteen minutes portions of the contents were seen to be rhythmically forced into the duodenum. In cats which had previously received an injection of morphin the picture was very different. In most cases, a certain amount of the food remained in the lower part of the esophagus for some time but the most constant occurrence was a stasis of the food in the fundus of the stomach. When the morphin was administered after the stomach was full the organ was seen to be divided into two parts by a spasmodic contraction of that circular bundle of muscle fibers known as the sphincter antri pylorici. That portion of the food which was shut off in the fundus by the sphincter remained there for a number of hours, while that which had already passed the sphincter went on undisturbed into the duodenum. Further experiments with a dog, in which a duodenal fistula had been established, showed that the time intervening between the entrance of food into the stomach and its passage into the duodenum was greatly lengthened by the influence of morphin and that it required much more time for the stomach to empty itself even after peristalsis had been re-established.

His observations on the small intestine, both by means of the fluoroscope and by direct observation of the isolated gut, showed a stimulating action of morphin in moderate amounts, while very large doses slowed or stopped the peristaltic movements. This he attributed to the action of the drug on the plexus of Auerbach. While the passage of the chyme through the small intestine was accomplished with more rapidity than under normal circumstances, its ultimate arrival at the colon was much delayed by its retention in the stomach. Magnus could demonstrate little or no influence of morphin on the movements of the large intestine.

These experiments suggest that the constipation caused by morphin is the result of the retention of food in the stomach, and this may be due, at least partly, to the hypersecretion and increased acidity of the stomach contents which, it is well known, exerts an inhibiting influence on the gastric and intestinal movements. An interesting observation of Magnus concerns the dilatation of the stomach which occurs under the influence of morphin, and which he attributes to the accumulation of air which seems to be retained in consequence of a spasm of the cardia.

To what extent these observations of Magnus on experimental animals may be applied to the human subject remains to be demonstrated. Clinical evidence has shown that under many circumstances the peristaltic movement of the small intestine in man may be completely controlled by the administration of morphin. The possibility suggests itself that this may be accomplished when small doses are used rather by a suppression of the exciting cause of hyperperistalsis, such as some sensory irritation, with perhaps a blockade of the foodstuff in the stomach, than by the direct influence of the drug on the motor mechanism of the intestine.

These investigations suggest the interesting practical questions. To how great an extent does the use of morphin previous to operation tend to favor the occurrence of acute dilatation of the stomach, and what is the action of anesthetics, like chloroform, on the movements of the gastrointestinal canal?

A JOURNAL OF HEALTH (?)

We recently received a copy of a journal of health which we have difficulty in classifying. At first sight it impressed us as being a perfectly ethical though rather popular exchange There was an article on milk supply by a physician who also had a high scholastic degree, and, although this article was a eulogy of a certain dairy, there was much in it of interest Other articles dealt with what the people ought to know about proprietary remedies, medical frauds preying on women, osteopathy, etc, and expressed exactly the same general principles that we ourselves would enunciate, but with the significant exception that, in each instance, some particular remedy or institution was selected for the highest praise The journal contained a liberal padding of humerous and "literary" material and some advertisements Curiously enough, none of the advertisements were alluded to in the reading notices, and the announcement was made that no proposals would be received for insertion in the reading pages The only way in which we can explain such a journal is that it is conducted by a syndicate of firms that want a certain kind of advertising, at the same time it is difficult to understand how such a journal could obtain *bona fide* advertisements from outside concerns, and why such a journal would be mailed to a physician of nominally good standing It also seems a peculiar course to proclaim general ethical and hygienic principles and to expect that a fairly intelligent public will fail to see that they apply just as well to the nostrums and institutions singled out for praise as to others It would be interesting to know if such a journal can secure a genuine subscription list, and if this kind of advertising, which shows up plainly the weak points of quackery in general, can be made to pay for certain quacks who say that they are different from others

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[1] Münch. med. Wochschr., No. xxix, 1907.

ALASKA AS A HEALTH RESORT

The experience of the Army, which keeps about eight hundred soldiers constantly stationed at its posts in Alaska, would seem to indicate that that country is a remarkably healthy location for troops There are six posts scattered over the vast territory, four of them but little south of the Arctic Circle Notwithstanding that a great deal of labor incident to construction and maintenance of telegraph lines has devolved on the troops, the sick rate has been uniformly low, not at any time more than two-thirds of the rate in the United States Since the statistics for Alaska have been compiled separately, that is since 1904, there has been but one case of typhoid fever and but four cases of malarial fever, all the latter probably contracted before going to Alaska, though mosquitoes of the sub-family *Anophelena* have been found at one post Pneumonia is conspicuous by its absence from the returns On the other hand, venereal diseases, alcoholism and tuberculosis have given higher rates than in the United States The long, dark winters, with the consequent confinement to quarters, and the imperfect ventilation of the quarters resulting from the efforts to exclude the cold, have no doubt been factors in the development of tuberculosis These same influences, together with the monotonous life in winter, have unquestionably encouraged the drink habit and its attendant liability to venereal infection The fact remains however, that Alaska is comparatively free from infectious diseases, and in the health-preserving qualities of its climate far surpasses that fairy land of the tropics, Hawaii

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HISTORIC SALT FREE DIET IN ASCITES

The value of a salt-free, or at least a salt-poor, diet in the treatment of edematous conditions is generally conceded to be a comparatively modern theory That the fact was known clinically at least, ten centuries before the christian era and probably much earlier is evidenced by the Charaka-Samhita The Charaka-Samhita and the Susruta-Samhita are ancient Hindu medical works compiled from a still more venerable work, the Ayur-veda, which the Hindus say was written by the gods The date of the compilation of the Charaka is probably 1000 B C and it corresponds to the Hippocratic treatises, in fact, there is little doubt that Hippocrates made free use of the work The Charaka is written in Sanscrit of the most ancient construction This ancient work, after describing the various kinds of "dropsy" and the appropriate treatment for each, recommends for "abdominal dropsy" (ascites) tapping The postoperative treatment reads as follows [1] "When the water has been let out the patient should first observe fasts and then take 'peya' (thin gruel of rice or other corn[2]) without any kind of oily substance and *salt* After this the patient should for six months live on milk only For the next three months he should live on 'peya' mixed with milk For the next three months he should take the rice with milk but *devoid of salt*" The following prognosis is given by Charaka if the instructions are followed "Conducting himself thus for one year, one may conquer abdominal dropsy characterized by accumulation of water even when it has manifested itself in a pronounced way" This is a reminder that "there is no new thing under the sun" With peculiarly distorted views of human physiology and still more weird conceptions of pathogenesis of disease, these ancient writers, from careful clinical observation, had achieved no inconsiderable skill in the treatment of disease

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METEOROLOGIC FACTORS AND ACUTE RHEUMATISM

The relation which acute rheumatism bears to meteorologic conditions has long been a subject of speculation and seems likely to remain so for some time It would naturally be assumed that the disease would be most prevalent in moist weather, but this is so far from being the case that Newsholme and other authorities have brought forward evidence which strongly supports the view that exactly the opposite is true, viz that rheumatism is most apt to occur in extremely dry weather Some recent studies published by Greenwood and Thompson[3] seem to support the view that acute articular rheumatism occurs most frequently, in England at any rate, during the driest month, August The article points out that most of the conclusions as to the meteorologic relations of rheumatism have been drawn from hospital statistics, and it further shows that a "general hospital population" is constituted differently from a normal population This really opens up the whole question of disease statistics and suggests that many of them, being based on studies of hospital patients rather than on the normal population, probably contain serious errors It suggests that in working out problems of this kind the collective investigation method carried on by committees of medical societies or of groups of practitioners, will probably give more reliable statistics than hospital records

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[1] From the English translation of Charaka Samhita by Paresh nath Sarma, Calcutta

[2] Corn is here used to mean any small grain

[3] Journal of Hygiene vii, No 2 1907

YELLOW FEVER IN CUBA

The reappearance of yellow fever in Cuba is a matter of a good deal of sanitary significance, especially in the light of the testimony of Governor Magoon as to the inefficiency of the local municipal authorities in matters of sanitation In Havana reasonable attention to health conditions could be looked for, but in the smaller cities and rural districts, as the recent outbreak at Cienfuegos demonstrates, this could not be guaranteed There seemed little prospect judging from past records and the governor's testimony, that the Cuban local authorities would if left to themselves carry out the conditions of the treaty securing Cuban independence, so far as sanitation is concerned The signing of the decree[1] by Governor Magoon by which the sanitary service is nationalized is, therefore, a matter of great import The municipal sanitary service is by this important measure, taken out of the hands of the local authorities all over the island and placed under the control of the Havana department of sanitation The local authorities have been tried and found wanting, a Cuba left to itself would doubtless be a yellow fever peril for many years to come With the closer commercial relations of the island with this country much closer of late years than before its separation from Spain, this has become a very important matter The United States has assumed a certain degree of responsibility for Cuban good government and welfare which some of us would be glad to see relinquished If such a policy were adopted, however, there is every reason to fear that conditions would soon become unendurable

VACCINE IMMUNITY

The advisory board of the Department of Health of Pennsylvania has ruled that three faithfully performed vaccinations at intervals of two successive weeks without taking are sufficient evidence that the individual is for the time being (estimated as one year) immune from smallpox This is probably correct enough for most sanitary purposes and the chances of a smallpox epidemic with such a rule in force may be practically negligible Many physicians however have seen cases in which typical vaccinia has been produced by a fourth or fifth attempt at vaccination hence it is not an altogether safe rule to follow with patients who have never been successfully vaccinated, that is so far as absolute immunity is concerned

NEED OF A NATIONAL VAGRANCY LAW

The need of a national law dealing with tramps or vagrants and of better provisions for dealing with this class in cities is urged by Graham Taylor,[1] in commenting on the paper of Orlando F Lewis on "Vagrancy in the United States" read before the National Conference of Charities and Correction The vagrant is a well-known means of introducing epidemics and when he crosses state lines the only effective means of dealing with him is by the national law and a national board of health The problem of the tramp in the cities has close relations with the public health Taylor says "Far better provision for lodging homeless men must be made by cities in municipal lodging houses of their own such as Chicago effectively conducts and by far stricter public regulation and supervision of lodging houses must be maintained for profit or by charity The antituberculosis crusade shows that this supervision and regulation should be shared by the health authorities with the police Within a period of five years 679 consumptives were taken from only a portion of Chicago's lodging house district to Cook County Hospital, most of them in the most dangerously infectious stages of the disease An investigator of Chicago's 165 cheap lodging houses and their 19 000 beds declares that 'the unfortunate man forced to sojourn in them for a while may enter sound and strong and come out condemned to death'"

Medical News

ALABAMA

Physicians' Building—An association of 15 physicians of Mobile, headed by Dr C S Spotswood, proposes to erect a four story building to be occupied exclusively by physicians, and to cost $50,000

Personal.—Dr James B Luckie, Birmingham, is reported to be seriously ill with spinal disease ——Dr Marion J B Vancroft has been elected president, and Dr John O Rush, secretary, of the Mobile Chapter of Auburn Alumni ——Dr Byron T Dozier, Birmingham, has been appointed surgeon general of *the United Sons of Confederate Veterans*

COLORADO

Scarlet Fever—By order of the Board of Health, the schools and theaters of Leadville have been closed on account of the prevalence of scarlet fever

Personal—Dr A W Scarlet, Pueblo, is convalescent after a severe attack of typhoid fever ——Dr William Page Harlow has been appointed dean of the medical school of the University of Colorado Boulder, vice Dr Lucian M Giffin, resigned, Dr Ross O Whitman, Chicago, professor of pathology and secretary, Dr Edward F Dean, Denver, professor of anatomy and Dr John Andrew, Jr, Longmont, demonstrator of anatomy

GEORGIA

Critically Ill—Dr George B Carter, a veteran practitioner of Wilkinson County, was recently seized with cerebral hemorrhage and is reported to be critically ill

Open to Female Students—The Atlanta School of Medicine has announced that the institution is to be made coeducational, and at the opening session, September 25, a dozen or more women will begin their studies at that institution

Against Tuberculosis—The Georgia Antituberculosis League held a meeting August 2, when the following officers were elected Dr Joseph M Thomas, Griffin, president, Dr J Cheston King, Atlanta and Harry R Slack, La Grange, vice presidents, and Dr Louis C Roughlin, Atlanta, secretary and treasurer

Railway Hospital to be Opened—Drs William C Jernigan, Thomas H Hancock and James D Manget Atlanta, surgeons for the Southern Railway the Georgia Railway and Electric

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[1] Referred to in Current News in this issue

[1] Charities and the Commons Aug 10 1907

Company and other corporations, are arranging to open a sanitarium and emergency hospital in Atlanta, September 1 A double tenement at 31 and 33 Cone Street has been secured and is being equipped There will be separate wards for white and colored patients, and ambulance service is to be provided

ILLINOIS

Communicable Diseases—A number of cases of typhoid fever are reported in Decatur——Dr Charles E Crawford, Rockford, inspector of the State Board of Health, has returned from Coal Valley, where he found 10 cases of smallpox and placed the infected houses under quarantine The disease is said to have existed in Coal Valley for two months, but had been diagnosed as chicken pox

Personal—Dr Joseph C Dodds, Champaign, has been appointed district surgeon for the Illinois Central Railroad between Gilman and Effingham, vice Dr Henry E Cushing, deceased——Dr F B Clark, Elgin, has been appointed assistant physician at the Illinois Western Hospital for the Insane, Watertown——Dr Robert Hoag has been transferred from the Home for Feeble minded Children, Lincoln, to the Illinois Northern Hospital for the Insane, Elgin——Dr James M Tinsley, Philo, sailed from Liverpool August 15, on his return from Europe

Chicago

Hospital Addition—The work on the George W Smith memorial addition to St Luke's Hospital was commenced August 19 By the will of the late George W Smith $500,000 was bequeathed for this purpose The new structure is to be devoted to paying patients, and the income from this to the charity wards of the hospital The building will be six stories in height and will contain accommodation for 112 patients

Islolation Hospital Closed—The Chicago Isolation Hospital was closed on August 20 because of the lack of patients Since December 20 74 smallpox patients have been under treatment at the hospital. The largest number registered was on March 20, when 20 patients were in the hospital Not one of the attending physicians, nor one of the thousands of visitors nor of the 2,000 medical students who visited the hospital, contracted the disease

Deaths of the Week.—During the week ended August 24, 684 deaths were reported, 14 more than for the preceding week and 104 more than for the corresponding week of 1906, the respective annual death rates being 16 02, 16 58 and 14 99 per 1,000 Acute intestinal diseases led death causes with 212, followed by consumption and violence (including suicide), each with 51, heart disease, with 45, pneumonia, with 39, and nephritis, with 37 Typhoid fever caused 11 deaths, scarlet fever, 8, diphtheria, 5, and whooping cough, 4

Communicable Diseases—During the week ended August 24, 55 cases of diphtheria, 68 of scarlet fever, 16 of whooping cough, 7 of measles, 20 of typhoid fever and 41 of consumption were reported This is an increase of 12 cases of diphtheria and 25 cases of scarlet fever over the preceding week The other diseases decreased slightly in number during the week The outbreak of scarlet fever in South Chicago has been kept under control by the active cooperation of the department of health and the police department, with the aid of the doctors and priests in that section of the city

INDIANA.

Personal.—Dr Ruliff L Fruitt, Hartford City, has resigned as a member of the city council——Dr Richard B Wetherell, Lafayette, sails from New York in October for a trip around the world.

Warning to Physicians.—On account of the increase in typhoid in Fort Wayne, the city board of health has sent a circular letter to physicians calling attention to the necessity for the immediate report of contagious diseases in accordance with the state statutes

Epileptic Village—Dr W C Van Nuys, superintendent of the State Epileptic Village near Newcastle, announces that the first two cottages are completed and furnished, that attendants have been engaged, and that the institution will be ready to receive patients as soon as the governor issues his proclamation declaring the institutions open.

Evansville to Fight Tuberculosis—An Evansville Anti-Tuberculosis Association has been organized A tract of land is to be secured near the city where the tents will be erected for the care of patients Dr James Y Welborn has been elected president of the association, which proposes to raise a fund of $15 000 with which to conduct the work. The physicians of the city have been asked by the association to report all cases of tuberculosis

INDIAN TERRITORY

Buy Hospital—The Muskogee Hospital Association has purchased the Martha Robb Hospital in that city

Personal—Dr Walter Penquite, Chickasha, fell down an embankment recently and fractured a rib——Dr Robert H Henry has been elected a member of the Ardmore Board of Health

IOWA.

Free Dispensary to Open—The Sioux City Medical College in cooperation with Helping Hand Mission, will open a free dispensary September 1 Regular clinics will be open to all students of the college

Personal—Dr and Mrs Theodore B Askew, Waterloo, sailed for Europe August 24——Dr Lee M Coffee, Keokuk has been elected professor of clinical diseases of the stomach and intestines in Keokuk Medical College, and Dr John R Walker, Fort Madison, professor of etiology, hygiene and state medicine——Dr J L Whinery, Marshalltown, is critically ill

KENTUCKY

Veterinarians Attend Meeting of Dairymen—Dr F T Eisenman, state veterinarian, and R M Allen, state inspector of food and dairy products, were invited to attend the mass meeting of the dairymen of Hardin County, held at Elizabethtown, August 24 The purpose of the meeting was to enable the dairymen of Hardin County to compare notes relative to their business and to give and receive suggestions looking toward better sanitation in the way of handling milk The meeting is the result of the refusal of the health department to allow the milk from a certain dairy to be received in the city until a tuberculin test has been made of the twenty cows of the herd A number of cases of acute milk infection has been traced to the milk delivered by this dairy One cow was found infected and the rest were healthy

State Board Meeting—The twenty ninth annual meeting of the State Board of Health was held at Bowling Green August 23 The following officers were elected Drs Joseph M Mathews, Louisville, re elected president for two years, and J N McCormack, Bowling Green, re elected secretary for the seventh consecutive time, for a term of four years Prof Felix C Herrick of the Male High School was elected student examiner for Kentucky to pass on the entrance qualifications of students of medicine The following order regarding tuberculin tests in dairy herds was passed

> In the examination for dairy herds for tuberculosis the state veterinarian and his assistants are hereby instructed to confine the tubercular test to cows actually and individually diseased instead of extending it to the entire herd, and diseased individual cows shall be condemned instead of putting the entire herd or farm in quarantine The board offers a reward of $25 for the conviction of any person practicing medicine or any branch of the healing art in the state in violation of law The examining committee reported that 29 applicants had passed the examination for license to practice in the state and that 19 had failed to make necessary grade The secretary in his report calls attention to the meager appropriation given to the State Board of Health in comparison to other appropriations for the health departments in other states The State Board of Health receives but $5 000 while the appropriation for the Massachusetts State Board of Health is $110 000 and for that of Louisiana is $100 000 It was also shown that there had been 13 805 cases of typhoid fever reported by Kentucky physicians with 1 579 deaths There were 3 219 deaths from tuberculosis, 1 935 from diarrheal diseases of childhood 1 008 from diphtheria, 933 from dysentery and 119 from scarlet fever

MARYLAND

Baltimore.

Bequest to Physician—By the will of the late Albert D Shrewsbury half of his property is bequeathed to Dr Annie W Marchant for services rendered him during his last illness

Personal—Dr Robert P Bay, assistant surgeon at the University of Maryland Hospital, has resigned to become medical superintendent at Bayview Asylum Dr R W Crawford has succeeded Dr Bay

Frank Memorial Hospital.—The drawings for the Frank Memorial Hospital, adjoining the Hebrew Hospital, have been completed It has been decided to erect only one structure instead of two, as originally contemplated

Tuberculosis Campaign.—By a combination of the most advanced method of advertising, circular letters, etc., the Maryland Association for the Relief and Prevention of Tuberculosis has raised in 23 days the required $10,000 required for its maintenance for a year

MASSACHUSETTS

Personal —The Lawrence board of health has appointed Drs J Forrest Burnham, John C Bowker John J O'Sullivan, Joseph I Howard and Alphonse H Petit school physicians

Illegal Practitioner Sentenced —William H Bailey, Somerville, who is said to have been arrested many times for malpractice, but never yet found guilty, and who was charged with performing an illegal operation on a 19 year old girl, was found guilty in the Suffolk Superior Criminal Court, August 14, and is said to have been sentenced to imprisonment for from three to five years in the state penitentiary

Healer in Trouble —John R Laxton, a "botanic" healer of Lynn, was summoned before the police court August 23, charged with practicing medicine without a license This is one of the first shots fired in the battle which Lynn physicians have started against a great number of persons in that city alleged to be practicing medicine without the license required by the state In this case the defendant pleaded not guilty and the case was continued until September 6

Too Expensive an Outfit —The owners of small shops and factories are objecting to the long list of surgical instruments, appliances and dressings required by the order recently issued by the Boston board of health The cost of the outfit is said to be about $25, and no provision is made for modification in regard to the size of the factory or the number of employés The law in the case is as follows

> Every person firm or corporation operating a factory or shop in which machinery is used for any manufacturing purpose, or for any purpose except for elevators or for heating or hoisting apparatus shall at all times keep and maintain, free of expense to the employes such a medical and surgical chest as shall be required by the local board of health of any city or town where such machinery is used containing plasters, bandages, absorbent cotton gauze, and all other necessary medicines, instruments and other appliances for the treatment of persons injured or taken ill on the premises
>
> Any person firm or corporation violating this act shall be subject to a fine of not less than $5 nor more than $500 for every week during which such violation continues

MINNESOTA

Epidemic Diseases —The prevalence of diphtheria at Eveleth is causing alarm ——Appleton is said to be threatened with an epidemic of scarlet fever

Pasteur Institute —The Pasteur Institute of Minnesota at Minneapolis is fully equipped and ready to receive patients It is located in the new building at the State University known as the Institute of Public Health and Pathology, and is under the control of Dr Orianna McDaniel

MONTANA

Society Meeting —At the annual meeting of the Beaverhead County Medical Association, Dr Maurice A Walker, Dillon, was elected president, Dr Robert H Ryburn, Bannack, vice president, Dr Frederick M Pointdexter, Dillon, secretary, and Dr Harry A Bond, Dillon, treasurer

Personal —Drs John J Buckley and Thomas A Fitzgerald, Missoula, were injured by the overturning of an automobile recently ——Dr H W Miller, of the Northern Pacific Hospital, Missoula, has gone to Jamestown, N D, to become first assistant physician in the State Hospital for the Insane —— Dr Albert H Gieschen, Butte, has been appointed house physician of the Wells Hospital in that city

NEBRASKA

Personal —Dr Clifford W Walden, Beatrice, has been appointed surgeon to the Second Infantry, Nebraska N G —— Dr R B Harris has been appointed police surgeon of Omaha

State Board Ruling Sustained —The ruling of the State Board of Health in revoking the license of Dr John T Mathews, Omaha, charged with performing a criminal operation, has it is reported, been sustained by the district court

Sues for Lost Diploma —Dr George H Whiteside, Omaha, has entered suit against the Adams Express Company for $20,000 damages for the loss of his diploma, which was sent to the State Board of Health at Lincoln for registration and which has not been returned to him

NEW HAMPSHIRE

Opening Exercises —The opening lecture of the one hundred and eleventh annual session of the Dartmouth Medical School Hanover, was given August 6 by Dr C B G de Nancrede of the University of Michigan Ann Arbor

The State Sanatorium Site —At a meeting of the governor and council in Concord, August 8 the commission appointed to recommend a site for the state sanatorium for consumptives, reported in favor of a site comprising 300 acres of land at an elevation of 1 300 feet, in Glencliffe in the town of Benton

Eddyite Sentenced —Herbert Whitney, an Eddyite and milkman of Concord, was arraigned on the charge of neglecting to report a case of scarlet fever to the authorities and on August 16 is said to have been sentenced to pay a fine of $10 and costs and to be imprisoned thirty days in the House of Correction The sentence was suspended on his promise not to repeat the offense

Personal —Dr George W McGregor, Littleton, was seriously injured recently in an automobile accident, suffering a fracture of the shoulder ——Dr John H Neal, Rochester, former state senator, has resigned as medical referee for Strafford County, and has been succeeded by Dr Forest L Keay, Rochester Dr and Mrs Neal are taking a trip to the Pacific Coast ——Dr Fred E Bryar, North Sandwich, has been appointed deputy medical examiner for Carroll County

NEW JERSEY

Epidemic Diseases —Typhoid fever continues to prevail in the Hospital for the Insane at Trenton Several new cases have developed, and the authorities consider that there is grave danger of the disease spreading to the city ——Diphtheria has appeared in epidemic form in the Italian colony of Hammonton, and that section of the city has been quarantined

Personal —Samuel T Atchley, Trenton, has been elected warden of the State Hospital for the Insane, Trenton ——Dr John C Beckwith, Atlantic City, surgeon and superintendent of the life guard corps, has been appointed police surgeon —— Dr Daniel Millspaugh, Paterson, was attacked and seriously injured by a patient in Riverlawn Sanitarium recently —— Dr Peter P Rafferty, Redbank, has succeeded Dr John W Ward as medical director of the State Hospital for the Insane Trenton ——Dr Samuel English, Camden, has been elected medical superintendent of the New Jersey Tuberculosis Sanatorium, at Glen Gardner, and has assumed the duties of his position

NEW YORK

New York City

Personals —Dr Carlos F McDonald sailed for Europe August 21, and Dr and Mrs Joseph R Davidson, August 24

Trinity Hospital Closed —This hospital, which was conducted by the Episcopal Sisterhood of St Mary up to four years ago, and since by the corporation, has been closed for repairs and may not be reopened

Children's Hospital —Tenement house nurses are being instructed at this hospital in the work of saving babies and teaching mothers to care for their infants This is being done at an expense of $15,000 This is a new and successful departure and the expense is being defrayed by John D Rockefeller

Contagious Diseases —There were reported to the sanitary bureau, for the week ended August 17, 351 cases of tuberculosis, with 147 deaths, 201 cases of diphtheria, with 21 deaths 175 cases of measles, with 11 deaths, 97 cases of scarlet fever, with 5 deaths, 68 cases of typhoid fever, with 13 deaths 18 cases of whooping cough, with 18 deaths, 5 cases of cerebrospinal meningitis, with 9 deaths, and 8 cases of varicella, a total of 926 cases and 224 deaths

Typhoid Fever —During the first half of 1907 there were reported 1,028 cases of typhoid as compared with only 816 for the same period of last year The east side of the city appears to be almost immune In a report received last week it was shown that there were 28 nuisances still in the watershed These will be corrected at once Dr Darlington says that the condition of the city from a health point of view could not be better Whatever nuisances there are at present will be abated and the watershed will be a model of its kind The water supply on the north shore of Staten Island requires investigating, 25 cases of typhoid having appeared within ten days

NORTH CAROLINA

Personal —Dr Robert P Noble, Selma, has been appointed surgeon for the Norfolk & Western Railroad, with headquarters at Marion

Disease for June —During June measles was reported from 33 counties, whooping cough from 29 scarlet fever from 9, typhoid from 62, malarial fever from 11, cerebrospinal meningitis from 8, mumps from 1, pneumonia from 25, and smallpox from 14

June Mortality —During June the report to the State Board of Health from 21 towns showed 313 deaths, equivalent to an annual mortality of 17 6 per 1 000 Diarrheal diseases are responsible for 74 deaths, consumption for 40, heart diseases for 26, violence including suicide for 14 and typhoid fever, pneumonia and brain diseases, each for 10

OHIO

Presents Medical Library—Mrs Buckingham has presented the entire library of her late husband, Dr John L Buckingham, Springfield, to the Warder Public Library The trustees have appointed a committee of three physicians to organize and maintain the new enterprise as follows Dr Clarence H Kay, president, Dr Noah Myers, vice president, and Dr Thomas M Reade secretary The library will be accessible to all physicians, pharmacists and dentists

Additions to Faculty—The following additions to the faculty of the Miami Medical College, Cincinnati, are announced Dr Derrick T Vail, clinical professor of ophthalmology, Dr Charles E Caldwell, professor of principles of surgery and orthopedic surgery, Dr James T Heady, professor of medical economics, Dr Frederick B Samson professor of chemistry and toxicology, Dr John W Murphy, clinical professor of laryngology, Dr Joseph A Hall, assistant to the professor of gynecology, Dr C S Bond, lecturer on photo micrography, Dr Francis M Hollingshead, instructor in physiology, Dr R. E Gaston, instructor in physiology, Dr J Ambrose Johnston, clinical lecturer in surgery, Dr Frank B Cross clinical assistant in laryngology, Dr A J Markley, clinical lecturer in dermatology, Dr Samuel E Allen, professor of hygiene, Dr William D Porter, professor of obstetrics, and Dr Mark A. Brown, professor of physical diagnosis

Unlawful Practitioners Punished.—"Professor" Mayo, who was arrested at Bucyrus July 11, charged with practicing medicine without a license, is said to have been fined $100 and costs on each of two charges, and to have gone to jail in default of payment——The license of Dr Carey S Ferris, Cleveland, charged with quackery, is said to have been revoked by order of the Probate Court——The appeal of W E Remyen, Uhrichsville against the revocation of his certificate by the State Medical Board for alleged moral turpitude, has been denied——The certificate to practice medicine granted to Dr Joseph E Wenman, Lorain, is said to have been revoked by the secretary of the State Board of Medical Examination and Registration July 3, on the charge of having made illegal use of the mail by sending obscene literature——Dr James A Ambrose Dayton, charged with performing a criminal operation which resulted in the death of a woman, was found guilty and is reported to have been sentenced to imprisonment for 18 months in the state penitentiary

PENNSYLVANIA.

State Society Meeting—The fifty seventh annual meeting of the Medical Society of the State of Pennsylvania will be held in Reading, Sept 23-26, 1907 The preliminary program gives every indication that an active and interesting meeting will be held

Society Meetings—The physicians of Sullivan County met at Dushore, August 9, and organized a county medical society Drs George D Nutt, Williamsport, and Cyrus L Stevens, Athens secretary of the state society, were present and assisted in the organization of the society The following officers were elected President, Dr Martin E Herrman, Dushore, secretary, Dr William F Randall, Dushore, treasurer, Dr Philip G Biddle Dushore, delegate to the state medical society, Dr Arthur J Bird, Overton, alternates, Drs H. Irvin Woodhead and John R. Davis, Forksville, and censors, Drs Justin L Christian, W H. Randall, Dushore, and J R. Davis, Forksville——The second annual meeting of the Fifth Censorial District Medical Society was held in Carlisle, August 13, when the following officers were elected President, Dr James Evelyn Pilcher, Carlisle, vice president, Dr Charles Rea, York, and secretary, Dr John J Coffman, Scotland (re elected) An address on "Medical Organization" was delivered by Dr Isaac C Gable, York, president of the state association

Philadelphia.

Personal.—Dr J Leslie Davis was recently operated on for acute hernia——Drs M. J Horn and J B McAvoy, resident physicians in the Medico Chirurgical, were thrown from the hospital ambulance August 19 and sustained severe contusions

To Repair Naval Hospital—As a result of the visit of Surgeon General Rixey to the Naval Hospital located here, it is reported that several alterations and improvements will be made in this institution Dr Rixey also visited the Navy Yard and will recommend a new dispensary for the men at League Island.

Diphtheria on Train.—It was discovered by the board of health that three children suffering with diphtheria were brought to this city from New York, August 22 The health authorities have instituted stringent measures to prevent a spread of the disease and nine cars of the Pennsylvania Railroad were fumigated

Health Report—The total number of deaths reported for the week ended August 24 reached 489 This is a decrease of 13 from the number reported in the preceding week and an increase of 8 over the number reported in the corresponding week of last year The principal causes of death were Typhoid fever, 14, pertussis, 6, diphtheria, 11, consumption, 46, cancer, 31, apoplexy, 17, heart disease, 52, tetanus, 2, acute respiratory disease, 19, enteritis, 94, Bright's disease, 26, premature birth, 9, congenital debility, 17, suicide, 4, accidents, 9, and marasmus, 12 There were 100 cases of contagious diseases reported, with 26 deaths, as compared with 148 cases and 17 deaths reported the preceding week There was an increase of 21 cases of typhoid fever over the previous seven days

School Inspections—Reports just completed by the health bureau show that one out of every four children in the elementary school is afflicted with some physical or mental defect The report of the medical inspectors shows that 135,959 children were examined and that 25 9 per cent were afflicted with some ailment In that classification were included 16,054 out of 67,404 boys, or 24 0 per cent, and 18,660 out of 68,495 girls, or 27 2 per cent A further analysis showed that of the 135,959 children inspected 78,732 were promoted on their class standing last June without examinations Of these, 18,644 or 23 6 per cent, were in the medical defective class, while 57,227 failed to attain the exemption standard and had to take the regular examination Of these, 18,226 or 31 8 per cent, were rated as medically defective The exempted children included 37,920 boys and 40,812 girls, while the non exempted included 29,944 boys and 27,283 girls Following is the statistical table showing in detail the causes of the defects noted in the exempted and non exempted classes

Defect	Exempted children	Non exempted children
Eye	8 105	7,730
Ear	965	1 087
Nose	1,258	1,459
Throat	4 815	4 027
Skin	2,400	2 166
Orthopedic	405	348
Mental	68	610
Miscellaneous	628	799
Totals	18,644	18,276

TEXAS

Dengue Under Control.—It is reported from Corpus Christi and Brownsville that the dengue situation is well in hand The physician of Bee County has accordingly advised against quarantine measures

Impure Milk—Charges have been filed by the Board of Health of San Antonio against 13 dairymen of the city, for selling impure milk

Personal.—Dr James Byars, Columbus, has returned from a trip to South America——Dr Jesse M Pace, Dallas, has resigned as a member of the board of health

Medical Board Organized—At a meeting of the Medical Examining Board for the State of Texas, August 16 and 17, Dr Marquis E Daniel, Honey Grove (eclectic), was elected president, Dr Thomas J Crowe, Dallas (homeopath), vice president, and Dr Garland B Foscue, Waco (regular), secretary The first meeting of the board will be held October 21 at Fort Worth

UTAH

Pre-Medical Course—The University of Utah, Salt Lake City, announces that students desiring to secure the degree of doctor of medicine may take the first two years of their work at the university, and that their work will be given full credit by the leading medical colleges of the country

Sanitary Condition of Southern Utah.—The State Medical Inspector, F E Clark, reports that in general the sanitary conditions of towns in the southern part of Utah are very bad, that the water is of inferior quality, that little attention is paid to the cleaning of corrals or outhouses, and that there are a great number of sloughs in which a great many mosquitoes are bred. Many towns get their drinking water from small rivers into which masses of sewage are poured

WEST VIRGINIA

Antituberculosis League—A local branch of the West Virginia Antituberculosis League has been organized at Grafton, with Dr Thomas F Lanham, president, and Dr Joseph H. Doyle, recorder Dr Wallace Longstretch, general field manager of the league, will visit 17 cities in the state during September in the interest of the organization

Personal—Dr Fleetwood Clarksburg medical examiner for the B & O R R, has been transferred to Pittsburg Pa, and Dr W B Rogers formerly medical examiner at Clarksburg, has been transferred to Baltimore——Dr Ed Cummings has been placed in charge of the department of diseases of the lungs in the Hinton hospital

WISCONSIN

Medical Lobbyists Expense.—Milwaukee Medical College is said to have filed in the office of Secretary of State a schedule of the expense, amounting to $1,309 50 incurred in its fight against the bill creating a college of medicine in the University of Wisconsin

Smallpox.—Several cases of smallpox have occurred in the Glasgow and Hardie s Creek settlements near Galesville——Seven cases of smallpox have been discovered in the town of Milwaukee and Health Commissioner Bading complains that proper care is not being taken in their isolation

Hospital Car in Service—The hospital car of the Milwaukee Street Railway, built and equipped according to the plans prepared by Dr Charles H Lemon was put into commission August 23 During the day 26 patients were treated by Dr Lemon There were no serious cases and no accidents

Chiropractic Acquitted—A jury in La Crosse is said to have returned a verdict, August 14, finding Shentago Morikubo, a so called "chiropractic," not guilty of breaking the state law which compels the licensing of surgeons and osteopath physicians The defendant was immediately rearrested on a new charge of practicing the art of healing and receiving money as a physician

Personal—Dr J A Paterson has purchased the interest of Dr George B Taylor in the Taylor Institute Iron River——Dr U J Tibbitts Prospect is reported to be critically ill with septicemia——Dr Albert H Brundage, Milwaukee, professor of toxicology in the department of pharmacy Marquette University has been appointed to the chair of physiology, and Dr Arthur J Somers has been appointed a member of the faculty of the institution

Pre-Medical Courses—The Lawrence University announces that a pre medical course of two years will be introduced in that institution which will include the subjects of the first two years in medical colleges——The new medical course in the University of Wisconsin will open with the fall term No clinical work is to be given The department of pathology and pharmacology will take up the manufacture of serum and antitoxin

GENERAL

Manila Free from Disease—The report of the Manila bureau of health shows that for the first six months of the year no epidemic disease had been reported and states that this is the first time such conditions have been on record During June there were fewer deaths in the city than at any time since the American occupation

The Yellow Fever Situation in Cuba—Lieut Col Blair D Taylor chief surgeon at Marianao, reported to the War Department, August 22 that no new cases of yellow fever had occurred at Cienfuegos but that there was one new case at St Nicolas In a report from Governor Magoon to the War Department, the charge is made that there has been a most complete disregard of the treaty obligation under which the Palma government agreed to keep the island clean and healthy so that it should no longer be a source of danger and infection to the United States and other countries On August 26 Governor Magoon signed a decree nationalizing the sanitary service that is taking the municipal sanitary service out of the hands of the local authorities and placing it under the control of the department of sanitation in Havana It has been found impossible under diverse municipal sanitary regulations to stamp out yellow fever On August 26 five new cases of the disease were reported from Cienfuegos making a total of ten in the city All but one of the patients are Spaniards The last of the soldiers attacked by the disease was discharged from the hospital August 26

Society Meetings—At the annual meeting of the National Fraternal Congress in Buffalo N Y August 20 the following were elected officers of the medical session President Dr George G McConnell Chicago vice presidents Drs Jane W Carroll Buffalo N Y and Wallace K Harrison Chicago secretary Dr F Irane Morrill Chicago and treasurer, Dr Talbert Sleneau Port Huron Mich——At the regular quarterly meeting of the Fairfax Medical Association held in Alexandria Va August 2 the following officers were elected Dr George Tully Vaughan Washington D C president Drs Llewelyn Powell, Alexandria, and Frederick M Brooks Swetnam, Va, vice presidents, Dr Edwin L Detwiler, Herndon, treasurer and Dr Robert L Wilkins Alexandria secretary——The thirty-third annual meeting of the Mississippi Valley Medical Association will be held in Columbus Ohio, October 8 10, under the presidency of Dr H Horace Grant Louisville Ky The orator in medicine will be Dr George F Butler Chicago, and the orator in surgery, Dr Frank D Smythe, Memphis, Tenn The association is furthering the work of medical research by offering a prize of $100 for the best original essay on some medical or surgical subject The committee to award this prize is composed of Drs Hugh T Patrick, Chicago, Charles H Hughes St Louis, and Albert H Cordier, Kansas City, Mo Dr Florus F Lawrence is chairman of the committee of arrangements

FOREIGN

Cholera in China and Japan—Cable reports state that cholera has broken out in the Chinese quarter in Shanghai and that several Europeans also have succumbed to the disease Twenty five cases are reported from Moji, in southern Japan and several other Chinese and Japanese coast towns are said to be infected

Australasian Medical Congress—The eighth session of the Australasian Medical Congress will be held in Melbourne Oct 19 24 1907 The council of the University of Melbourne has granted the use of the university buildings and the government of Victoria has undertaken to print the transactions of the congress Special meetings will be devoted to (a) the relations of the medical profession to hospitals, and (b) syphilis

Medical Inspection of School Children in South Australia—The *Australasian Medical Gazette* states that the government of South Australia is beginning to recognize the value of healthy children as an asset to the state The minister of education, the Hon T Price, recently declared his intention of seeking parliamentary assistance in his crusade against defective eyesight among school children He wishes to have a physician appointed to examine the eyes of every child in the schools A certificate will then be given stating the condition of the child's sight, and if it is defective, in what way, this will secure the necessary attention to the defects discovered The hearing is also to be tested and that will incidentally, of course, reveal the presence of adenoids, which are generally associated with defective development Mr Price recognizes that this procedure will cost money, but, as he says, it is necessary to keep "the best asset the state can have—good healthy children, and thereafter healthy citizens"

British National Society for the Prevention of Cruelty to Children—At the annual meeting of the Manchester and District Branch of the National Society for the Prevention of Cruelty to Children, July 23, according to the report in the *British Medical Journal*, some interesting statistics were given During the year 1 540 cases, involving the welfare of 4 723 children, had been investigated Of these, 1,082 were known to be insured for over £11,000 Of the 1 540 cases inquired into, 1,480 were for neglect, 40 for other forms of ill treatment, and 10 for exposure for begging purposes Warnings were given in 1 334 cases 101 persons were sent to prison 10 bound over, 7 reprimanded, 2 dismissed, and one case was withdrawn The lord mayor, who presided, in moving the adoption of the report said that he was informed that 95 per cent of the cases of neglect investigated by the society were due to intemperance Mr R J Parr, in seconding the resolution, said that the society is doing an educative as well as a preventive work, and that he believes that most of the deaths are caused by ignorance on the part of parents In the first few years of the society's existence 45 per cent of the cases dealt with were for brutality, but last year the proportion of cases of gross brutality was only 8 per cent, and he claimed that much of this improvement is due to the society s methods

Special Pay for Medical Officers in India—The government of India has announced its intention of granting special pay to officers of the Royal Army Medical Corps of the Indian Medical Service The *Lancet* states that the allowance will be payable to officers below the rank of lieutenant-colonel for special sanitary surgical or medical work done for the state which it is not in the power of an ordinary medical officer to perform with the same efficiency as the specialist It will not be a personal allowance but will be granted only to incumbents of certain specified appointments There will be 105 specialist appointments in India, each carrying pay at the rate of Rs 60 a month Of these fifty five will be allotted to the Royal Army Medical Corps and fifty to the Indian Medical Service in military employment The special subjects are as follows

(a) prevention of disease (including parasitology, bacteriology, and preventive inoculation) forty appointments, (b) dermatology (including the prophylaxis, treatment of, and instructional measures in connection with venereal diseases), ten appointments, (c) advanced operative surgery, twenty appointments, (d) ophthalmology, ten appointments, (e) electrical science (including skiagraphy), ten appointments, (f) mental science two appointments, (g) otology, laryngology and rhinology, three appointments, and (h) midwifery and diseases of women and children, ten appointments

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug 17, 1907

Outbreak of Cerebrospinal Meningitis in Belfast

At the recent meeting of the British Medical Association, Dr A Gardner Robb, in the section on medicine, made some observations on the outbreak of cerebrospinal meningitis in Belfast Of 230 cases which occurred there, 100 ended fatally Three different kinds of serum were used in treatment without beneficial effect Phenacetin seemed to give the greatest relief from headache, but no relief was obtained from the use of mercury, iodids, bromids, quinin or the salicylates

Alcohol and the Medical Profession.

A meeting of the British National Temperance League was held in Exeter during the meeting of the British Medical Association So many pronouncements have been delivered by physicians in Great Britain during the past few months on the value of alcohol, that the subject is becoming somewhat tiresome The extremists on both sides press their views and the moderate man is severely handled by the opponents of alcohol if he ventures to express opinions which in any way clash with theirs Dr Davy, president of the association said that notwithstanding the fact that most temperance advocates usually talk the most unscientific twaddle, and although he is personally in favor of light beer as a beverage rather than tea he emphatically supports the principle of temperance The general attitude of all the speakers was averse to alcohol in any form

Free Meals for Children.

Mr C F G Masterman, M.P., speaking on the subject of free meals for children, pointed out that the state has now taken on itself the responsibility of seeing that every child in the elementary schools should have sufficient food—breakfast or dinner, as the case may be—to enable it to carry out its studies The weakness of the act, however, is obvious in that it is not universal, and the result on the whole has not been encouraging

Critical Position of the New Sydenham Society

The New Sydenham Society, which has done valuable work for half a century in translating important medical works from foreign languages, is in a critical position It has been a prosperous as well as a useful society Twenty years ago its volumes in their well known bindings might be seen on the shelves of all doctors who aspired to a good library The works of the great foreign masters, such as Trousseau, Charcot and Virchow, were thus made available to English readers But *tempora mutantur et nos mutamur in illis* The modern developments of medical journalism have to some extent though by no means completely rendered the work of the society superfluous The authorities of to day publish their views to a greater extent in periodicals than used to be the custom, and the important articles which appear in foreign journals are translated and abstracted in English journals to an extent not known before Moreover, the enormous output of text books with their rapidly succeeding editions competes heavily with the monograph, however good Finally, this is not an age productive of great masters, whose writings are reverently cherished and conned for decades This is an age of mediocrity, and men want to read of the latest discoveries or, perhaps one should say, alleged discoveries, which have not yet been replaced by views equally ephemeral. As a consequence of the changed conditions of publication, the New Sydenham Society has in recent years turned its attention from the translation of monographs and essays to the publication of a valuable atlas of "Illustrations of Clinical Medicine and Surgery" In 1906 the society issued two double fasiculi illustrating the subjects of variola, vaccinia and varicella, and a printed volume containing selected papers on the parasites of syphilis and smallpox, In the current year they have issued an atlas on gynecologic subjects The society has still 900 members (who pay a subscription of $5 annually), but the production of the atlases is too costly for the income At a meeting of the council held in London it was decided to recommend the winding up of the society at the annual meeting

The Royal Commission on Tuberculosis

This commission has issued another bulky book of over 700 pages on "The Pathogenic Effects of Bovine Viruses" Different species of animals were inoculated In general, it was found that the goat is more susceptible to the bovine bacillus than the calf Tuberculosis is readily produced in pigs, but is not necessarily fatal The chimpanzee and the various species of monkeys are highly susceptible, only one lived 100 days after inoculation The dog was found very resistant to subcutaneous inoculation, but less so to intraperitoneal Feeding experiments were also carried out with different species of animals All, except the rat and fowl, developed tuberculosis The young pig was found the most susceptible animal and the adult dog the most resistant The goat was found less susceptible than the pig, and the calf less than the goat Cats were much more easily infected than dogs General progressive tuberculosis was set up in dogs with difficulty Several rats were fed with enormous numbers of tubercle bacilli and showed nothing beyond some minute necrotic foci in the mesenteric glands In the few experiments performed with fowls no disease at all was produced

The Pure Milk Bill

The so called pure milk bill for London is making progress The bill in question is really termed the London County Council's General Powers Bill, the most important of which is intended to prevent the sale of tuberculous milk The bill is a purely London one What are called model clauses passed is a purely London one What are called model clauses pass d in various parts of the country, but the London County Council and the county councils outside the metropolitan area are agreed on certain modifications which the Local Government Board opposed The most encouraging symptom of the situation in Great Britain as regards milk is that there is a general demand for national legislation to improve the supply

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Brain Exhaustion—C Meyers, Toronto, in the *Canada Lancet*, August, 1907, states that the differential diagnosis of brain exhaustion, while at times easy to make, is at other times one of the most difficult problems in medicine This is especially true in the somatic form of the disease in which the diagnosis between an organic and functional lesion becomes at times extremely difficult

Prophylaxis of Plague—The value of the domestic cat as a preventive against plague has been brought forward by Lieut Col A Buchanan, I M S, whose suggestion is referred to by the *Journal of Tropical Medicine and Hygiene* Buchanan took a cat census of certain villages that enjoyed exceptional immunity from plague and found that those villages harbored an exceptional number of cats Of course a corollary to the proposition "more cats, less plague," would be that of "more cats, fewer rats"

The Sanitary Importance of Ice in Hot Climates—The Englishman living in a climate which, while often raw and cold, is seldom too hot, is apt to overlook the importance of a supply of ice when he passes into other and totally different climatic environments This, according to the *Journal of Tropical Medicine and Hygiene*, is not the case with the American, who, being used to a wider range of temperature, fully recognizes the value of ice in hot weather from an instinctive knowledge of its sanitary importance The Anglo-Indian is the greatest sinner in respect to ignoring the sanitary importance of ice While he no longer plays cricket under the torrid heat of a Calcutta sun, in a top hat, he still braves the extreme temperature without the alleviation of either ice or punkahs The trouble is that from the (British) public and official point of view, ice is a mere luxury, whereas, it should be regarded as an essential of well being in the tropics, provided, of course, that it is not used improperly They did not "get on very well without it in the good old times" On the contrary, they grew ill and died There are many parts of Britain's tropical empire where ice is still unobtainable, notably on the African coasts There is no doubt that the improvement in diet and the increased efficiency of the community would, many times over, pay for the initial cost of ice machines and cold storage plants

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters, that a teaspoon holds five cubic centimeters, i e, more than a fluid dram, hence a *100 cubic centimeter* preparation will contain twenty doses]

Chronic Malaria

Chronic malarial poisoning is a chronic condition of malaise and debility with more or less anemia, often with an enlargement of the spleen, and generally caused by a previous severe or several mild attacks of malarial infection

In patients who have repeatedly had malaria it is not easy to eradicate the disease The peripheral blood may show no plasmodia, but blood obtained by splenic puncture will show these germs After a considerable period without quinin irregular muscle aches and pains, headaches and malaise occur, and the peripheral blood may then show the germs Enormous doses of quinin may be taken and tolerated, and still on stopping it, in a short time the symptoms again occur, the spleen harboring these germs These patients should receive a week of quinin treatment with small doses of quinin (2 or 3 grains three times a day) once a month for four or five months Small doses of arsenic (2 milligrams or 1/30 gr of the trioxid of arsenic, three times a day) taken for a long time seems to be of marked benefit in these cases Ammonium chlorid in doses of 50 centigrams (7½ gr) three times a day also seems to tend to aid in reducing the enlargement of the spleen in these cases Chronic malaria can be present without any evidence of enlarged spleen however If the spleen tends to remain enlarged from malarial poisoning, every possible means to reduce the enlargement, the splenic cold douche electricity *x* ray treatment and change of climate, should any and all be tried, as the condition is serious and it may lead to some serious blood disease Every means possible should be taken to build up the system and to ameliorate any anemia that may be present

Patients who do not become immune to malarial infection even under the repeated use of quinin should not live in malarial districts See article on malarial fever in department of Therapeutics, The Journal, Aug 3, 1907, page 427

Latent Malarial Infections

Dr Charles F Craig, assistant surgeon U S Army (*Yale Med Jour* June 1907) makes a distinction between chronic malarial infection and latent malarial infection He understands the latter to be an infection in which the malarial plasmodia may be demonstrated to be present in the blood of an individual, but in which no clinical symptoms of the disease of sufficient gravity to attract attention are to be observed "The term should not be confined to those instances in which no symptoms of malaria have ever been present for if the parasites be present in the blood in recurrent cases between the attacks, the disease is as truly latent as it may be before the initial one" He recommends the administration of quinin for a long period in this condition

Sunstroke

A method of treating this condition advocated by Captain W A Heppolette of India is referred to by Captain Foulds in the London *Lancet*, Dec 22 1906 The patients suffering from insolation are stripped, put on cots and one attendant pours cold water over them while another rubs ice over the body and a third gives an enema of a quart of iced water and this is repeated every ten minutes until the mouth temperature drops to 102 F Ice water enemata are also advocated in cases of heat prostration in which sunstroke has not actually taken place as possibly tending to abort collapse from heat

If conditions are satisfactory and a large bathtub can be had, there is probably no better method of treating insolation than by immersing the patient, with proper support for his head, in a tub of water which is constantly kept cold by additions of ice When a tub is not available, ice-water enemata should certainly be tried Whatever the cold application, care must be taken that when the temperature begins to drop the application is not continued too long During cold applications wet, iced cloths or an ice cap must be kept constantly on the head

If the patient is strong sturdy and full blooded venesection had perhaps better be done *especially if the face is flushed* and dark Some advise after venesection the intravenous injection, or hypodermoclysis of physiologic saline solution Whether or not the heart requires stimulation with hypodermics of strychnin, will depend entirely on the case

Gelatin Capsules

It is a sad commentary that the very gelatin capsules with which we endeavor to pleasantly administer bad tasting drugs should possibly contain the germs of tetanus, as stated by Dr Wiley in the *Dietetic and Hygienic Gazette* May 1907 Dr Wiley *states that the gelatin factories* are the dirtiest in the world, that this gelatin is sometimes made in glue factories, that the stuff that is not fit for glue is made into gelatin, and that this gelatin is used in ice cream and candies and to make capsules for the administration of medicine He also states that 'there is plenty of wholesome raw material for making clean pure gelatin"

It would be perfectly easy to investigate the purity of gelatin capsules by asking the druggist of whom he buys his capsules, and then from inquiry find where these capsules are made Next, some of the members of the American Medical Association who live in the towns where these capsules are manufactured could be requested to investigate the factories If the gelatin at these factories was found to be impure and dirtily made, a few letters written to The Journal and published, public opinion and the Food and Drugs Act could obtain pure, clean capsules for the administration of drugs

It is indifference and neglect of things that are positively known to be objectionable that allow the American people to be imposed on

Dengue

Dr P M Ashburn and Dr Charles F Craig, surgeons of the United States Army (*New York Med Jour* June 15 1907), could find no organisms in the blood in this fever and found no specific organism in cultures but they can inoculate dengue into healthy men by using blood from dengue patients They think the disease can probably be transmitted by the mosquito, and state that the period of incubation is about three and one half days *Dengue is not contagious*, but is infectious, like yellow fever and malaria They found a normal red blood count, with a diminished total white count (mostly a diminution of the polymorphonuclears with an increase of the small lymphocytes)

The symptoms of dengue or break bone fever develop suddenly, and are principally pains and aches referred to the muscles and bones especially is there severe headache and lumbar backache The pain *may* be excruciating The fever may rise to a considerable height, but often is not high it lasts a few days, and during the remission an erythematous rash appears on the body There may also be at this time some enlargement of the lymphatic glands in the neck axilla and groin The eruption may last a day or two to be followed by a second but less rise in temperature for a day or two when *convalescence* develops During the feverish period all the symptoms of *a general fever are present*

There is no specific treatment but absolute rest in bed, even if the disease is mild, and protracted rest even in convalescence seems to render the disease milder and hasten the termination One of the coal tar products, as antipyrin, acetanilid or phenacetin, is needed for the aches and pains, and if these are severe morphin must be given A useful combination of salol and acetphenetidin (phenacetin) is as follows

℞

	gm		
Acetphenetidini	1|50		gr xxv
Phenylis salicylatis	1|50	or	gr xxv
Caffeinæ citratæ	|25		gr x

M. et fac chartulas 5 Sig A powder every three hours

Or

℞

	gm		
Antipyrini	4|	or	ʒi

Fac capsulas 10 Sig Two capsules, with plenty of water, and repeat dose in twelve hours, if needed

If the headache is severe and there is much fever, an ice cap is indicated, and if the fever persists high, cold sponging must be done A saline cathartic is generally indicated The diet depends on the amount of fever present—a low diet if there is much rise in temperature

If the headache is intense and there are meningeal symptoms, bromids or even chloral may be given as

℞

	gm or c c		
Potassii bromidi	20|	or	ʒv
Aquæ	100|		fl℥iii

M Sig Two teaspoonfuls (10 c c.) or two fluidrams, in water, and repeat if needed Or

℞

	gm		
Chlorali hydrati	5|	or	ʒii
Syrupi pruni virginianæ	50|		fl℥ii

M Sig Two teaspoonfuls (10 c c) or two fluidrams, in water and repeat if needed

If there is much prostration, small doses of alcohol may be given

Gelsemium in small doses, preferably the fluidextract, or belladonna, best given in the form of the tincture, have been used successfully in stopping the pains

Achylia Gastrica

Dr Frank Billings, of Chicago (*Ill Med Jour*, July, 1907), states that Einhorn of New York, in 1892, suggested the above name for the condition in which there is entire failure of secretion of gastric juice, in other words, in cases where there is "entire absence of hydrochloric acid, pepsin, rennin, etc"

The treatment, when a neurosis seems to be the cause of the condition, consists, he states, in an attempt to improve the general nervous tone of the individual and by increasing the general nutrition by frequent small feedings of food of such a character that the unavoidably undigested remnants which may remain in the intestine will cause as little disturbance as possible The use of bitter tonics to attempt to stimulate the stomach secretions is of doubtful benefit The tincture of nux vomica in 15 or more minim doses before food is taken can do no harm and may be of possible benefit

℞

	c c		
Tincturæ nucis vomicæ	20|	or	flʒv
Tincturæ cinchonæ compositæ ad	100|		fl℥iii

M Sig A teaspoonful (5 c.c), a fluidram, in water, three times a day, before meals

Billings says that one can not give hydrochloric acid in sufficient amount to compensate for the absence of its secretion, but perhaps enough may be given to control partially the mechanism of the pylorus From 15 to 30 minims of dilute hydrochloric acid well diluted with water should be used after the feedings

℞

	c c		
Acidi hydrochlorici diluti	20|	or	flʒv
Aquæ ad	100|		fl℥iii

M Sig A teaspoonful (5 c.c), a fluidram, in water, three times a day, after meals

The acid may also serve as a stimulant, Billings asserts, to the secretion of the pancreatic and intestinal ferments

Changes in the Urine Due to Drugs

"Drugs that increase the amount of urine cause it to be lighter

"Drugs that irritate the kidneys cause the urine to be darker

"Methylene blue causes the urine to be green in color, if it is acid

"Phenol may cause the urine to be almost black

"Rhubarb may cause the urine to be brown (same appearance as bile)

"Santonin causes the urine to be yellow, if acid, purple, if alkaline

"Senna may cause the urine to be red, if acid, yellow, if alkaline

"Sulphonal and trional may cause the urine to be very dark"—Osborne's "Materia Medica and Pharmacology"

Many drugs interfere with urinary tests Methylene blue in the urine will allow a precipitate with Esbach's test for albumin on account of the picric acid it contains Balsam of copaiba, turpentine drugs, and sometime santal oil often allow a precipitate with nitric acid Terpin hydrate may cause the urine, on boiling and on the addition of nitric acid, to give a precipitate without albumin being present The tincture of myrrh can also give a precipitate with heat which may not be albumin

A number of drugs, or even biproducts and coloring matters absorbed from the intestine in serious constipation or intestinal fermentation, can cause reduction of copper in Fehling's test, and even in small amounts may cause decolorization of the copper solution Such urines must be tested by other methods before it is decided that glucose is present

Pharmacology

Kutnow's Powder—Patent or Proprietary?

The term "patent medicine" has been applied, rather loosely to those nostrums sold and exploited *directly* to the public, while the name "proprietary" has been given such preparations as are *advertised only* to the medical profession As has been many times exemplified by reports in THE JOURNAL, the distinction is often a very fine one and the dividing line frequently reaches the vanishing point

It is not unusual, for instance, for "proprietary" preparations to be foisted on the medical profession until a certain number of testimonials (of doubtful value, it is true, but still testimonials) have been ingeniously wheedled out of physicians and the product rather generously prescribed When this objective point has been reached the manufacturer comes into the open and advertises the nostrum to the public direct and the testimonials previously given for the "proprietary" are used as advertising assets for the "patent medicine"

Then again there are certain preparations which are "proprietaries" or "patent medicines" according to the location On one side of the Atlantic the product is advertised to physicians only, while on the other side it runs indiscriminately on the billboards and in the newspapers One of the best examples of this last class is Kutnow's Powder In England, where it originated, this preparation which "dissolves and eliminates uric acid," is consistently lined up with Beecham's Pills and Pink Pills for Pale People Full page newspaper advertisements announce the fact that free samples will be

SENT TO ALL APPLICANTS

In the United States, however, Kutnows have learned from their wide advertising experience that a cheaper and surer way of introducing a nostrum to the public is to advertise it to the medical profession only By means of advertisements in medical journals (whose space is much less expensive than that of the daily papers) and the liberal distribution of samples

SENT FREE TO PHYSICIANS ONLY

the medical profession becomes the unpaid "barker" for the nostrum manufacturer At present therefore, Kutnow's Powder is—in the United States—an ethical(!) 'proprietary"

There exists in this country as most of our readers know, an organization of "patent medicine" manufacturers whose "reason for being' is to get full value received for the $40,000,000 paid annually in advertising nostrums in the newspapers of the country This organization is known as the Proprietary Association of America The now familiar "red clause" in the advertising contracts by which the newspaper forfeits its contract if state laws are enacted that are inimical to the "patent medicine" interests is a creation of this organization and has been most effective in making the newspapers the unpaid lobbyists of the nostrum interests The "silence clause" is another 'joker" in the contracts by which the agreement is cancelled if matter detrimental to the nostrum "is permitted to appear in the reading columns" of the paper It is little wonder that with such weapons the "patent medicine" manufacturer has assumed an arrogance that is as disgusting as it is serious

Great Britain, too, has its "patent medicine" men's organization which is known as the Proprietary Articles Trades Association Of both these honorable bodies Mr S Kutnow of Kutnow Brothers, Ltd, is, or was, a conspicuous member At a recent meeting of the British organization, Mr Kutnow worked himself into a fine frenzy of indignation because of some articles that had appeared in the *Pharmaceutical Journal* of London on the subject of "Secret Remedies and Proprietaries" As these articles did not specifically mention Kutnow's Powder, and as criticism was directed against only those preparations as were most disreputable, it is evident that Mr Kutnow appraises his own product at its face value He gave his opinion of the *Pharmaceutical Journal* and told the meeting that when the advertising man for that journal solicited advertising he refused to have any more dealings with him owing to the articles that had appeared in the *Pharmaceutical Journal* He expressed himself as quite independent of any newspaper or journal, and able to take care of himself

Therein Mr Kutnow is mistaken, he is not independent of newspapers and journals On the contrary, he, and others of his ilk are most subserviently dependent on them Let reputable papers and medical journals refuse, for but one year, to carry the high flown advertisements of his Anglo American Patent Proprietary, and his firm would perforce seek some worthier it less profitable, line of business

The editor of the *Pharmaceutical Journal* resents Mr Kutnow's 'implied assumption that by inserting paid announcements in the advertising columns of a newspaper, he or any one else can dictate the policy of that organ"

The *Pharmaceutical Journal*, it should be said, is the official organ of the Pharmaceutical Society of Great Britain, and is the most influential organ of the drug trade in the British Isles It is refreshing to note, in these days of "canned" editorials and paid "write ups" masquerading as original articles that there is still to be found a journal that can not be bought

One wonders whether a large experience in the advertising world and especially his membership in the Proprietary Association of America has unconsciously led Mr Kutnow to assume that muzzling the press is one of the perquisites of the large purchasers of advertising space

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Carcinoma in Calcutta—In the report of the Medical College Hospital Calcutta given in the *Indian Medical Gazette* it is stated that 59 cases of cancer were analyzed Of these 76 3 per cent were males and 23 7 per cent females The sites affected differ largely from those given in western statistics Thus the penis was affected in 28 8 per cent of the cases, the breasts in 11 8 per cent the cheek lower jaw tongue and liver each in 6 7 per cent the upper lip pancreas and stomach each in 5 per cent the upper jaw, rectum and neck each in [illegible] 3 per cent, and the pharynx, thigh, larynx and epiglottis and gall bladder, each in 1 6 per cent of the cases Of the cases of cancer of the penis all the patients were Hindus, 29 per cent of whom gave a history of congenital phimosis The native habit of chewing betel leaves with lime may have some causal relationship to the frequency of cancer of the mouth

Correspondence

The Preparation of the Specialist

New Haven, Conn, Aug 17, 1907

To the Editor—Dr Shambaugh's article on "The Preparation of the Specialist' in The Journal, Aug 17, 1907, especially as regards what he says about the granting of the Ph D degree in medicine, deserves great applause and commendation It advances a thought that many a progressive man has felt, but failed to express It does indeed seem peculiar that universities should grant advanced degrees for work done in almost any of the sciences, except in medicine, as if to take no cognizance of its deep and exhaustive sciences And yet, at present, fully three fourths of all the research being carried out all over the world is in medicine Again, of all the scientific journals published, fully three-fourths are devoted to the medical specialties and their fundamental sciences In every respect, every one of the medical specialties stands in the first rank and on a par with mathematics, history, zoology, botany, etc Still, where is the university which offers courses toward the Ph D degree for investigations in internal medicine, in diseases of the eye, ear, nose or throat, or diseases of the nervous system, or even pathology? Many a man who engages on his Ph.D work, choosing anatomy, histology, bacteriology, embryology or physiology as his major, does so with the flimsiest sort of a rudimentary knowledge of any of these branches To what extent has he studied these? Practically none They were only in reality touched on in his academic school Yet, the thing which gives him access to the attainment of the Ph D is his bachelor degree in arts or sciences, whereas the physician, if he does not hold a B A or a B S, in spite of his superior knowledge and training in these branches, is barred from working toward that degree If this is the case with these fundamental subjects,, then what can be expected with medicine itself, with the higher specialties which seem to command no recognition in a graduate department's curriculum?

That leads to the question, "Is it justifiable that the possession of an academic degree be absolutely necessary before a man may engage on the work for his Ph D?" Why, no It is far better that he hold one, but it is wrong to make it absolute If a man has the ability and ambition to strive for something higher and is heart and soul a student, or if he possess an aptitude for original research, which many a Ph D does not, then by no means shoud the lack of an academic degree keep him from his Ph D The degree of Doctor of Medicine no longer represents a mere profession from the business point of view It represents a purely scientific pursuit as well, to do justice to the mass of practitioners who are striving their utmost for the advancement of science, and to the hundreds of Doctors of Medicine who give up their whole life to research The present status of medicine in its relation to the advanced degree makes it urgent for the benefit of mankind that certain reforms or rather improvements take place very shortly The change in entrance requirements to medical colleges taking place throughout the country makes the future recognition of the medical specialties, on a higher plane, more hopeful Philip Frank, M D

Hemiplegia as a Complication in Typhoid Fever

Pittsburg, Pa, Aug 17, 1907

To the Editor—On two or more occasions I examined the literature to ascertain the frequency of hemiplegia as a complication of typhoid fever, and I was able to find very few references to it Some text books failed to mention the subject, and in none can one find it adequately treated The accounts by Osler and Nothnagel were the fullest found Therefore the article on this subject by Dr Frank Smithies, Ann Arbor in The Journal, August 3, impresses me as a very valuable one After considerable search through the literature, Dr Smithies was able to collect forty-three cases In his text book Dr Osler refers to Hawkins' collection of seventeen cases as the largest number with which he is familiar The value of Dr Smithies' paper thus becomes apparent

The writings of Nothnagel, Osler and Hawkins, and this recent paper by Smithies indicate that hemiplegia is a very rare complication in typhoid fever But I am inclined to believe, that, while this is true, the complication is less rare than we had formerly supposed, for I have myself seen three well marked cases, two of which I have reported One of these (*Medical Record*, Dec 19, 1903) is included in Dr Smithies' table, the other (THE JOURNAL A M A, May 27, 1905) is not The third case I have never reported

The complication deserves more study, and it is to be hoped that physicians will place on record such cases as may come under their observation, so that a more adequate idea may be obtained as to the genesis character and frequency of this complication

THEODORE DILLER

Taxing Private Hospitals

CLEVELAND, OHIO Aug 15, 1907

To the Editor —In THE JOURNAL, July 27 1907, the matter of taxing private charitable institutions is discussed The view there taken is a mistaken one Public support given private institutions, no matter for what purpose organized whether religious, charitable or otherwise, is unsafe, as it tends to foster the unjust taxation systems under which we labor Exactly as I am glad to see half rates withdrawn from ministers of the gospel, so I would be happy to find all land or monopoly values (they amount in last essence to the same thing) taxed on their actual social value and that regardless of what use put to (except in the case of state institutions, where the reason for not taxing is self evident, clear cut and incapable of misapplication) Human nature being such that men will support the system which is easy on them, i e, which gives them an advantage, real or imaginary, over their fellows, irrespective of the justice of that system, I would rather not see the situation further muddled by more institutions on the free list Let there be economic justice, and charity (such as we have now) will become a nightmare of the past.

J E TUCKERMAN

Probilin.

PHILADELPHIA, Aug 24 1907

To the Editor —The report on Probilin in THE JOURNAL, August 24, explains my experience with the formula suggested by Dr R W Wilcox in his article on "The Medical Treatment of Gallstone Disease" (THE JOURNAL A M A, Aug 4 1906, page 347) Being desirous of carrying out the treatment suggested by Dr Wilcox, I prescribed the formula of phenolphthalein with acid sodium oleate and salicylic acid The pharmacist to whom the prescription was submitted informed me that it could not be compounded as written, but that he could dispense the materials massed separately in a capsule Subsequently the same pharmacist suggested the use of sodium salicylate in place of the salicylic acid, the following modified formula being prescribed

Sodium oleate	0 10
Sodium salicylate	0 10
Phenolphthalein	0 05
Menthol	0 015

Mix and dispense in 1 capsule

The sodium oleate was prepared by mixing the proper proportion of sodium hydrate and oleic acid

While my experience with the above formula has been limited to four cases, the results obtained seemed to be due to free catharsis resulting in a lessening of the jaundice and the presence of bile in the stools In no case were stones recovered Two capsules daily were found to produce active catharsis and dosage was limited to that number

HENRY F PAGE

Organization.—The spirit of the present organization of the medical profession is unique It is not the labor union spirit of merely personal and material benefit, it is spirit of personal uplifting, of personal education, of personal improvement in all those things which go to make a man a better physician and a better guardian of the sick in his charge.—Editorial in *California State Journal of Medicine*

Miscellany

Serum Treatment of Plague—Experience with the serum treatment of plague illustrates clearly the difficulties under which the experimenter labors in producing a curative serum for a bacterial infection of the blood like the plague The natural process of cure for plague appears to be the destruction of the bacilli which have entered the blood, while the toxins which they produce are destroyed or antidoted by the natural powers of the system No great amount of antitoxin appears to be formed in the organism which is able by its natural powers to cope with the toxemia only to a limited extent This explains in a manner the extreme fatality of the plague The destruction of the plague bacilli in the blood sets free a large amount of toxin which overwhelms the system so that it can not by its unaided powers antidote or eliminate it and a condition known as plague marasmus results This condition is graphically described by Choksy in his "Report on the Treatment of Plague with Yersin Roux Serum at the Maratha Hospital During 1905" The plague serums so far produced are bacteriolytic serums with little antitoxic power They hasten the destruction of the plague bacilli, but leave the system to cope with the toxemia unaided If administered before the bacilli have multiplied extensively in the blood, they cut short the disease, but if administered at a later period they may intensify the toxemia by increasing the bacteriolysis and really aggravate the condition Hence the administration of the serum in hospital practice, where a considerable number of cases are admitted somewhat late in the disease, shows but little advantage over the cases treated without the serum indeed, a larger proportion of cases exhibiting acute marasmus with marked toxemia are observed under the serum treatment than without it But if the hospital cases are analyzed according to the day of the disease when the treatment was applied a considerable improvement under serum treatment may be demonstrated Choksy finds that by summing up three series totaling 500 cases there was a general mortality of 53 6 per cent, while the percentage of mortality among those inoculated on the first day, numbering 89 cases, was only 38 2 The mortality increases in a regular ratio (with the exception of a slight drop on the fourth day) to 75 per cent of those inoculated on the seventh day The results from serum treatment are better in private practice largely because of the fact that such patients apply for treatment earlier and have better care The serum treatment not only secures somewhat better results in general, but it secures an earlier convalescence, marked by fewer complications than occur in cases that have not had serum treatment. Choksy instituted a comparison of the two methods of treatment under circumstances well calculated to give a fair representation of the value of each Of 148 cases, 46 were rejected as unfit for serum treatment, and of the remainder each alternate patient received serum treatment, the others serving as controls Of the 51 in the control group, 42 died and 9 recovered, while of those treated by serum 37 died and 14 recovered, the mortality being 82 3 per cent and 72 5 per cent respectively On the whole, therefore there can be no doubt that there was distinct gain under the serum treatment, and that more lives were saved than under the ordinary treatment The results leave much to be desired, however This result, it must be remembered, is obtained in a disease that carries away about 84 people, on an average, out of every 100 attacked. Choksy is inclined to believe that, for the present at least, the limit of success is reached He suggests that the results might be better if the serum were administered intravenously If a serum could be discovered combining antitoxic and bactericidal properties, more lives could doubtless be saved Under the present circumstances, a grave responsibility would seem to rest on those in charge of plague hospitals, if they withhold the serum even for a few hours

Efficient Treatment of Ivy Poisoning—The extremely poisonous character of poison ivy or *sumach*, the especial susceptibility of some individuals, and the fact that cases of poisoning occur in which there is no evidence of positive contact with the plant, leading many to think that the poisonous constitu ent is volatile, lend a peculiar interest to attempts to determine the composition of the plant and the source of its poisonous properties Previous researches on this plant have been more or less unsatisfactory, but some late investigations by S F Acree and W A Syme (*Journal of Biological Chemistry*, March, 1907), seem to have been more successful in advancing our knowledge of this plant The authors found that the plant contained a poisonous tar, gum or wax, which appeared to be the active ingredient in producing the phenomena of poisoning This substance seemed to be non volatile, as no poisonous substance was carried over when it was warmed to 55 C (131 F) with acetic acid or with alcohol The poisonous tar or wax was decomposed by acids and yielded gallic acid, fisetin and rhamnose, showing the probable source of these compounds in the plant, and indicating that the poison is a complex substance of a glucoside nature Perhaps the most important outcome of the investigation is the discovery of a rational remedy for the effects of the poison The poison was found to be easily oxidized by potassium permanganate, and it occurred to Dr Syme that this should be a good antidote for its effects The successful use of permanganate in rhus poisoning was reported by Maisch, 1866 (*Am Jour Med Sci*, lii, page 288), but it never came into general use, probably on account of its staining the skin and clothing Its use for this purpose is not now mentioned in most works on dermatology or pharmacology Dr Syme found that, when applied so as to reach the seat of the poison in the vesicles, it acted as an antidote, and what appeared to be a severe case of poisoning was cured very quickly The solution was kept as hot as could be borne for about half an hour The use of hot water not only reduces the swelling, but also helps to destroy the poison The action of the permanganate is also more rapid at high temperatures The concentration of the solution used is varied according to the location and condition of the eruption Where the skin was thin or already broken, dilute solutions (1 per cent) were used It is important that the remedy should be well rubbed into the skin In one case the eruption occurred in the palm of the hand, where the skin was so thick that it was necessary to open it before the remedy could reach the poison The difficulty of getting the remedy in contact with the poison in the skin is the reason why the eruption is so hard to cure Other remedies which have been used may owe their utility to the chemical characters of the poison Lead acetate has been used to a large extent and depends for its success on its power of precipitating an insoluble lead compound of the poison This compound is not, however, completely insoluble and eventually the poison becomes freed from the lead and resumes its irritating action Alcoholic solutions should not be used because the alcohol dissolves the poison, and on evaporation leaves it spread over a larger surface like a varnish The stain on the skin produced by potassium permanganate can be removed by vigorous scrubbing with soap or by a warm solution of oxalic acid, but the latter should not be used by persons not familiar with its action

Etiology of Dengue Fever—Ashburn and Craig record the results of their investigations regarding the etiology of dengue fever in the *Philippine Journal of Science*, May 1907 Over 600 cases of dengue were treated in the general wards of the hospital at Fort William McKinley without a single case originating among the other patients in the wards Of the men on duty belonging to the hospital corps only four contracted the disease three of these being nurses on night duty in the wards and the other a cook having no contact with the dengue patients The only precaution taken to prevent contagion was the rigid use of mosquito nets at night The dengue and other patients ate together and were closely associated throughout the day The only men unprotected by the mosquito nets at night—the three night nurses—contracted the disease All the experiments with fomites were negative Healthy men lived in mosquito proof tents with dengue patients sleeping in the same beds putting on the underclothes and pajamas of the patients and eating from the same table None of these men developed the disease They conclude from their experiments that 1 No organism can be demonstrated in either fresh or stained specimens of dengue blood with the microscope 2, the red blood count in dengue is normal 3, no characteristic morphologic changes in the red or white blood corpuscles occur in this disease, 4, dengue is characterized by a well marked leucopenia, the polymorphonuclear leucocytes being decreased, as a rule, while there is marked increase in the small lymphocytes, 5, unfiltered dengue blood inoculated intravenously into healthy men is followed by a typical attack of the disease, this also follows inoculation of filtered blood, 6, the cause of the disease is, therefore, probably ultramicroscopic, 7, dengue can be transmitted by the mosquito, *Culex fatigans* (Wied), and this probably is the commonest manner of transmission, 8, no organism of etiologic significance occurred in bouillon or citrated blood cultures, 9, in experimental dengue, the period of incubation averages three days and fourteen hours, 10, certain individuals are absolutely immune to dengue, 11, dengue is not a contagious disease, but is infectious in the same manner as is yellow fever and malaria The treatment, as indicated by their experiments, is chiefly prophylactic Protection from mosquitoes is probably all that is necessary When the disease exists, cold bathing, sponging and the use of ice caps are advisable to keep the temperature within bounds, opium and the bromids, they think are probably safer routine measures than the coal tar products, where there are much pain and nervous manifestation

Prison Sentence for Eddyite—The duty of the parent or guardian to furnish medical attendance for a sick child is affirmed in the decision of Justice McKean in the case of the state against Clarence W Byrne an Eddyite, of New York City who allowed his 6 year old daughter to die of bronchial pneumonia without calling a physician As noted in our news columns August 10, the sentence was thirty days in the city prison The question whether or not religious belief constitutes a valid excuse had already been decided by the Court of Appeals in the People vs Pierson There a child died of bronchial pneumonia without having medical attendance, and the father by adoption was convicted of violation of the statute The conviction was sustained on the distinct ground that failure to procure medical attendance through disbelief therein and faith in the curative methods by prayer did not constitute a "lawful excuse" Justice McKean says "An individual of some other cult with equal plausibility, could plead disbelief in educational methods as an excuse for not sending children to school, could withhold food, clothing and shelter, leaving each, as part of his religion, to be furnished through the same or similar agency" Motion for a new trial was made on the ground that a regularly licensed physician would testify that, in cases of pulmonary pneumonia in children of 6 years of age, the room should be kept at a temperature of from 70 to 75 degrees, a trained nurse should be in attendance, and, in many cases, the use of drugs is not needed The justice says "The affidavit of this physician is general It does not pretend to speak of the case of this defendant's daughter or to know anything of the symptoms manifested in her illness He could not, therefore, schedule the case as being within his generalization Medical attendance is needed but this need not be constant A doctor's skill and experience are believed to be sufficient to detect the cause of the trouble and then to prescribe the proper remedies or the proper care to avert the disaster A physician, authorized by the state to practice his profession, must be procured for children dangerously ill, and a parent who omits this imposed duty can find no legal excuse if the disease ends fatally, in the fact that his views differ from the legislative policy of the state"

Tuberculous Lymph Glands—J Eddy Blake, Brooklyn, in the *Long Island Medical Journal* states that in a patient susceptible to tuberculosis and exposed to this disease it is just as illogical to suppose that removal of the affected glands in the neck will be followed by a cure and immunity to tuberculosis, as it is to suppose that tonics and massage will restore tuberculous glands to normal when they have undergone caseation, and abscesses have formed Both may be possible, but neither need be expected

Treatment of Urticaria—N F Aronstam, in the *Medical Fortnightly*, states that calomel sodium salicylate and small doses of extract or tincture of belladonna will benefit the most intractable cases of urticaria even after all other remedies external and internal have failed to effect a cure

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U S Army, week ending Aug 24, 1907

McCulloch, C C, Jr, surgeon, relieved from temporary duty at Fort Meade S D and will return to Ancon, Canal Zone, and resume his duties with the Isthmian Canal Commission

Wadhams, S H, asst surgeon, granted fifteen days' leave of absence

Ives F J, surgeon granted twenty one days leave of absence

Hartsock, F M asst. surgeon, granted thirty days leave of absence

Ashford B K. asst surgeon left Washington Barracks, D C., en route to Camp Perry, Ohio for duty

Davis, W R, asst. surgeon, advanced to the rank of captain from Aug 8 1907

Huggins J B asst. surgeon, in addition to his other duties will report for duty as medical attendant, Washington Barracks, D C, during the absence of Capt Bailey K Ashford, asst surgeon at Camp Perry, Ohio

Bourke, James asst surgeon ordered to proceed to Camp Captain John Smith, Jamestown Exposition Norfolk Va for temporary duty during the absence of Capt P L Jones asst. surgeon, on whose return to Camp Captain John Smith Lieutenant Bourke will resume his duties on the transport *Kilpatrick*

Phillips J L and McCulloch, C C Jr surgeons, and Noble, R E, asst surgeon appointed members of a board to meet at Ancon Canal Zone, Isthmus of Panama Sept 23, 1907, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion or advancement.

Murray Alexander, asst. surgeon ordered to report in person to Major J L. Phillips surgeon president examining board at Ancon Canal Zone, Isthmus of Panama, for examination to determine his fitness for advancement.

Fisher H C surgeon appointed a member of Army Retiring Board to meet at Denver vice First Lieutenant G A Scott asst. surgeon

Darnall, C R asst. surgeon left Washington, D C, on thirty days leave of absence

Snyder C R, asst. surgeon, granted thirty days leave of absence

Brown O G asst. surgeon, left Fort Robinson Neb, with troops on practice march

MacDonald, C. E. cont surgeon arrived at San Francisco, on leave of absence for one month from the Philippines Division.

McCown T B, cont. surgeon granted leave of absence for three months.

Tetrault C A. cont surgeon ordered to Fort Baker Cal for temporary duty

Gunckel G I, dental surgeon ordered to visit professionally Fort Dade Fla. Fort De Soto Fla, Fort Screven Ga, Fort Fremont, S C Fort Moultrie, S C and Fort Caswell N C

Wing F F dental surgeon left San Francisco August 15, on the transport *Buford* for Philippine service

Whinnery J C, dental surgeon, left Fort Egbert Alaska, for duty at Fort Gibon Alaska

Le Hardy, J C., cont surgeon, ordered to proceed to Fort Lawton, Wash for duty

MacDonald C E cont surgeon will accompany Ninth Infantry to Fort Sam Houston Texas and report to the adjutant general of the army for further orders

Parkman W E. cont. surgeon will accompany Troops I, K L and M Sixth Cavalry to San Francisco, and then return to his proper station

Voorhies H G dental surgeon returned to duty at Fort D A. Russell, Wyoming from leave of absence

Chamberlain G E, cont. surgeon, reported for duty at Fort Walla Walla, Wash

Garcia L. C cont. surgeon will proceed from Fort Riley Kans, to Fort Leavenworth Kans in time to report on Aug 30 1907 to the commanding officer for duty to accompany the Third Battalion of Engineers (less Co K) by rail to Fort Riley Kans.

Navy Changes

Changes in the medical corps, U S Navy, for the week ending, Aug 24 1907

Baker M W P A surgeon detached from the naval hospital, Boston and ordered to the naval hospital New Fort Lyon Colo

Taylor E C P A surgeon ordered to the naval hospital New York, for treatment.

(Orders issued by the Commanding General Army of Cuban Pacification August 8) Holloway James H P A surgeon Camp Columbia Cuba will proceed to Palmira Province of Santa Clara Cuba for duty, relieving William A. Angwin, asst. surgeon

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Aug 21 1907

Wertenbaker C P surgeon directed to proceed to Cape Charles Quarantine Station for temporary duty on completion of which to rejoin his station in Norfolk Va.

Clark T P A surgeon, granted leave of absence for fourteen days from Aug 26 1907

King W W P A. surgeon relieved from temporary duty at the Hygienic Laboratory and directed to proceed to San Francisco reporting to the medical officer in command Angel Island Quarantine Station for duty and assignment to quarters

Stansfield H A P A surgeon directed to proceed to San Francisco reporting to the medical officer in command for special temporary duty

Amesse John W P A surgeon relieved from duty at Ellis Island N Y and directed to proceed to Havana, Cuba for duty in the office of the American Consul General

Collins G L asst surgeon granted leave of absence for one day Aug 17 1907

Krulish, Emil, asst surgeon directed to proceed to Ellis Island, N Y, reporting to the chief medical officer for duty

Adamson B G, acting asst surgeon, granted ten days extension annual leave on account of sickness, from July 28 1907

Bailey, C W, acting asst surgeon, granted leave of absence for ten days, from Sept 16 1907

Hicks B I acting asst surgeon, leave of absence granted for twelve days from Aug 4, 1907 revoked

Ransom S A, acting asst surgeon, transferred from Shanghai, China to Kobe, Japan, for duty, vice J P Fowler, acting asst surgeon

RESIGNATIONS

Resignation of F T Olsen, asst. surgeon, accepted, effective Oct 12 1907

Turner, Linton, acting asst surgeon, resigned to take effect Aug 15, 1907

BOARDS CONVENED

The board convened to meet at Chicago, July 25, 1907, for the purpose of examining an inspector of immigrants amended B S Warren, P A surgeon, to act in place of J J Gerkins, acting asst. surgeon

A board of officers was convened to meet at Galveston, Texas, for the purpose of recommending a site for a national quarantine station Detail for the board Capt Percy W Thompson, U S R C S, Surgeon J H White, P H and M H S and Capt J C Oakes, Corps of Engineers, U S A (by authority of Secretary of War)

Health Reports

The following cases of smallpox yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended Aug 23, 1907

SMALLPOX—UNITED STATES

California Oakland July 1 21, 1 case, San Francisco Aug 4 10, 1 case

Indiana General, June 1 30, 103 cases in 31 counties

Iowa Keokuk July 1 31 2 cases

Louisiana New Orleans, Aug 1 10, 1 case, Shreveport, Aug 7 14 1 case

Massachusetts Boston Aug 12 17, 1 case

Michigan Detroit Aug 4 10 2 cases

New Jersey Newark Aug 4 10, 2 cases, West Hoboken, Aug 9 15 2 cases

New York New York City Aug 4 10, 1 case

Utah Salt Lake July 1 31, 5 cases

Washington Spokane, July 28 Aug 3, 1 case, Tacoma, July 28 Aug 3 2 cases

SMALLPOX—FOREIGN

Austria Galicia, June 23 July 13, 9 cases Vienna, July 21 27, 1 case

Brazil Para, July 1 27 9 cases 2 deaths Pernambuco, June 1 15 77 deaths June 16 30 109 deaths Rio de Janeiro, July 8 14, 4 cases 3 deaths

Egypt Cairo July 9 22 1 case 1 death

Canada Halifax Aug 4 10 2 cases

Chile Iquique July 18 24 present

China Shanghai July 1 13 6 foreign cases, 83 native cases

Ecuador Guayaquil July 21 27 1 death

France Paris, July 21 27 11 cases 4 deaths

Great Britain Sunderland July 21 27, 1 case

India Bombay July 11 16 3 deaths Calcutta, June 30 July 6 9 deaths Rangoon June 30 July 6 1 death

Java Batavia June 16 July 6 5 cases

Madeira Funchal July 22 28, 45 cases, 3 deaths

Manchuria Dalny July 7 13 2 cases

Mexico Mexico City July 14 20, 8 deaths Monterey Aug 2 8 1 death.

Portugal Lisbon, July 21 27, 9 cases

Russia Batoum June 24 30 1 case, St. Petersburg July 14 20 2 cases Warsaw July 14 20 2 deaths

Siberia Vladivostok June 29 July 5 1 case

Spain Malaga June 1 30, 4 deaths Valencia June 22 28 14 cases 1 death

Turkey Constantinople July 22 28, 1 death

CHOLERA

China Tientsin, Aug 15 epidemic

Japan Moji Aug 20, 26 cases

India Bombay July 10 16 1 death Calcutta June 30 July 6 44 deaths Cochin June 28 July 5 7 deaths Kashmir, June 30 July 9 42 cases 26 deaths (subject to increase) Madras July 6 12, 1 death

Straits Settlements Singapore June 23 29, 1 death

YELLOW FEVER

Brazil Manaos June 30 July 6 3 deaths, Para, July 21 27, 1 case, 1 death

Cuba Alacranes Aug 19 1 case Cienfuegos Aug 15 19, 8 cases 1 death Matanzas Aug 7 19, 2 cases 2 deaths

West Indies Trinidad, Port of Spain July 25 31, 6 cases, 2 deaths.

PLAGUE—UNITED STATES

California San Francisco, Aug 12 14, 5 cases, 4 deaths

PLAGUE—FOREIGN

Africa King William s Town June 23 July 6 2 cases

Brazil Rio de Janeiro July 8 14, 2 cases Pernambuco June 1 30 3 deaths

China Swatow June 1-15 present

Chile Antofagasta, July 2 8, 3 cases Pisagua, July 18 24, present

French Indo China Saigon June 28 July 4 15 cases 15 deaths

Japan Formosa June 30 July 13, 116 cases 98 deaths

Peru Callao, July 2 17 3 cases 1 death, Lima July 2 10 1 case 1 death Mollendo, July 11 17 1 death Paita, July 12 17, 1 case 1 death Trujillo July 2-4 11 cases 4 deaths

Egypt Alexandria July 19 Aug 1 13 cases, 6 deaths Port Said, July 19 Aug 1 2 cases 2 deaths

Provinces Behera July 19 Aug 1 6 cases 8 deaths Beni Souef July 19-Aug 1 4 cases 1 death Kena July 19 Aug 1, 7 cases 7 deaths Minieh, July 19 Aug 1 1 case, 1 death

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION CONTRACT PRACTICE. INSURANCE FEES MEDICAL LEGISLATION, ETC

Dispensary Abuse

The results of the investigation made by a committee, appointed by the president of the Medical and Chirurgical Faculty of Maryland, of the dispensary evil is interestingly summarized by Dr W S Thayer in the *Maryland Medical Journal* for July 1907

A letter was sent out to a number of physicians in the city of Baltimore and their answers to it show a wide divergence of opinion on the subject As against the commonly accepted opinion that many people able to pay for medical services seek free service at the dispensary, one physician of large experience says "Doctors seem to me to be eminently unable to judge of the financial standing of people" He calls attention to the fact that owing to the common habit in this country of living up to the limit of their means there are many people who, owing to temporary misfortune or loss of work, are really in a condition of genuine want It is common for women when visiting a dispensary to put on the best clothes they have and thus give rise to an entirely erroneous impression as to their financial status He further states that many physicians have confessed to him that the dispensaries are a 'relief" to them, as the patients "when unable to pay go to dispensaries and when in funds send for their attending physician again" He concludes that "when the average American has money he spends it and becomes a pauper under any misfortune that is lasting"

Still another physician, a young man depending entirely on his practice for his support and who has had considerable experience in work among the poor, thinks the dispensary "evil' a much exaggerated one While he admits that there are doubtless individuals who abuse the charity he is inclined to include the doctor with the patient in such abuse He asserts that the physician often uses the dispensary to obtain a 'cheap consultation or to allay the fears of a dissatisfied chronic or neurasthenic and thus prevent his drifting away"

*The advertisement which the senior members of some hos*pital staffs get by their names being printed on the dispensary cards which the patients carry to their homes is, in the opinion of another physician, a serious abuse Still others maintain that the practice which obtains in some dispensaries of accept*ing fees from individuals who can pay or who offer to pay* is a vicious one Dispensaries, they claim, should be charitable institutions pure and simple The dispensary which 'attempts to partially defray expenses by charging a fee' as well as that "which is run for commercial purposes or as a feeder to *the practice of attending physicians'* is unworthy of existence

Still another physician was sure that the only abuse that exists is to charge persons for the prescription This payment of a nominal fee has "prostituted more paying' patients into beats' than anything' he has encountered in twenty five years' practice People who would indignantly deny being objects of charity go to such dispensaries and sop their consciences by paying this ten cent fee

As Dr Thayer remarks, 'the regulation of dispensary abuses is a very wide problem one which is obviously not to be settled by any *simple measure"*

The article abstracted above is interesting as an expression of individual opinion on a matter of great importance to both the public and the medical profession As Dr Thayer has pointed out, there is a wide difference of opinion on the subject of the abuse of dispensary treatment It is safe to assume that much of this diversity of opinion is due to the lack of accurate concise data on the subject It is evident that some of the physicians whose opinions were given had very little realization of the importance of the subject and had not considered it carefully While interesting as a collection of individual opinions, it would seem to be more to the point if an exact tabulation of Baltimore dispensaries had been made classifying them according to their connection with teaching institutions, character of patients treated etc as well as the number of patients treated annually the average number of times each patient was treated and the amount of care exercised by the physicians to avoid treating those able to pay We feel safe in saying from the results obtained by the committee on the abuse of medical charities in Chicago and from investigations in other large cities that a careful statistical study of the dispensaries of Baltimore will show that a surprisingly large percentage of the population of that city are the recipients of gratuitous medical services and that the percentage of persons receiving medical charity far outnumbers the percentage of persons receiving any other form of charitable relief This is an evil peculiar to large cities and one which should be most carefully and exhaustively studied before any generalizations on the subject are attempted

Organization Notes

The Cumberland Valley Medical Association composed of the members of the societies of the counties of Washington, Maryland, and Franklin and Cumberland, Pennsylvania, announces its fifth annual meeting, to be held at Blue Mountain House, Maryland, September 5

The Bucks County (Pa) Medical Society held its fourth annual assembly at Menlo Park, August 14 The object of the meeting, as announced in the circular by the president, was "to promote a closer bond of unity between physicians through social intercourse, to give our wives an opportunity to enjoy themselves with us, to bring the press, law, pharmacy theology and medicine into closer fellowship, and to teach each profession that a closer relationship will be mutually advantageous The after dinner program for the meeting included addresses on "The Druggist and the Doctor," by the vice-president of the Bucks County Druggists' Association, "The Press and the Doctor," by the editor of one of the local newspapers, and The Lawyer and the Doctor," by a prominent Bucks County attorney

The Rhode Island State Board of Health has issued a special bulletin showing the sanitary legislation enacted in the various states during the years 1905 and 1906, including new acts and amendments to existing acts regarding the practice of medicine, state boards of health, pure food and drug regulation and other hygienic and sanitary questions These two pamphlets, compiled by Dr Charles V Chapin for the state board, will be of great interest and value to anyone working along these lines

Society Proceedings

COMING MEETINGS

Medical Society of the Missouri Valley, Council Bluffs, Iowa, Sept 5
Washington State Medical Association Seattle September 10 12
Colorado State Medical Society Glenwood Springs, Sept 17 19
Amer Assn of Obstetricians and Gynecologists Detroit, Sept 17 10
American Electro Therapeutic Assn , Boston Sept 17 19
Medical Society of the State of Pennsylvania Reading Sept 23 26
Southern Medical Association Birmingham Ala Sept 24 26
Amer Acad of Ophthal and Oto Laryng Louisville Sept 26 28
American Public Health Assn Atlantic City Sept 30 Oct. 4
Medical Assn of District of Columbia Washington Oct 1
American Roentgen Ray Society Cincinnati Oct 2 4
Idaho State Medical Society Boise Oct 3 4
Delaware State Medical Society, Wilmington Oct 8
Nevada State Medical Society Reno Oct 8 9
Mississippi Valley Medical Association Columbus O Oct 8 10
Vermont State Medical Society St Johnsbury Oct 10 11

MINNESOTA STATE MEDICAL ASSOCIATION

Annual Meeting, held in Duluth, Aug 12 15, 1907

The President, Dr H A TOMLINSON, St Peter, in the Chair

About 200 members registered The first meeting of the House of Delegates was on Monday afternoon Three subsequent sessions were held A committee was appointed to consider medical defense and to report at the next meeting A committee was also appointed to draft a new medical practice act for presentation to the next legislature The present contract with the Lancet Publishing Company of Minneapolis, for the publication of the transactions of the society, was renewed for three years from Dec 31, 1907

St Paul was selected as the next meeting place, in October, 1908, the exact time to be determined by the council

Election of Officers.

The following officers were elected President Dr W H Magie, Duluth, secretary, Dr Thomas McDavitt St Paul, treasurer, Dr R J Hill, Minneapolis, members of the council (for three years), third district, Dr William Davis, St Paul, second district, Dr J J Millspaugh, Little Falls, fifth district, Dr H M Workman, Tracy

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WISCONSIN STATE MEDICAL SOCIETY

Sixty first Annual Meeting, held at Superior, Aug 21 23, 1907

The President, Dr. L H Pelton, Waupaca, in the Chair

The meeting was largely attended and successful The membership of the society is 1,503, as against 1,434 last year, out of a possible membership of 2,000 The physicians of Superior did everything possible to entertain the visitors, and the attendance reached 125

President L H Pelton, Waupaca, in his annual address sketched the progress of medicine and surgery to the present time, and said that such progress had resulted in increased longevity Their old society was a good one, but increase in numbers made reorganization and systematic alliance with the American Medical Association absolutely necessary National legislation should be secured by strict cooperation County and district societies should be encouraged, and the former should meet at least quarterly There is no profession where constant reading, observation and comparison are so necessary, none that has a greater range of usefulness, none where unity and fraternalism wherein lies the strength of all organizations is more to be desired than in the medical profession

Pneumonia

Dr. L A. Potter, Superior, said that this subject should be discussed each year until better treatment is secured and methods of prevention better understood The virulence of the pneumococci are greatly increased when passed through a susceptible animal Sudden chilling is a contributing cause, alcoholic drinks and narcotic drugs favor the disease, it is probable that the amount of nostrums which contain largely alcohol and narcotics, consumed in the past, has played an important part in the causation of pneumonia The means of prevention lie in general and personal hygiene and disinfection Health departments should have the same authority in pneumonia as in other contagious and preventable diseases There is no known specific for pneumonia, though one may be developed from the opsonic theory No advantage has been secured in the serum treatment Open air treatment is advantageous and the colder the weather the better the results The treatment, however, should be individualized

Mechanism of Pneumococcal Infection.

Dr H E Wolf, La Crosse, said that it is important to study carefully the organisms from the blood of pneumonia patients and of the mechanism by means of which the body protects itself against and combats infection Phagocytosis is dependent on the presence in the blood of opsonins The opsonic index shows the protective powers of the blood The opsonins can be increased by the injection of the proper bacterial vaccines, and in many cases this increase of opsonins is associated with favorable influence on the infection, thus indicating a new line of treatment and pointing toward the ultimate discovery of a specific for pneumonia The essential process in lobar pneumonia is pneumococcemia Blood cultures in fatal cases are always positive and more virulent than those taken from non fatal cases, but virulence (that is, the property by means of which the organism resists phagocytosis) has no influence on the extent of pulmonary localization nor on leucocytosis, the extent of pulmonary involvement has no influence on prognosis, leucocytosis is a favorable symptom, yet in the absence of sufficient opsonins is useless The opsonins in pneumonia are decreased and in fatal cases remain below normal, while in recovery they rise above normal just before the crisis The typical pneumococcic opsonic curve can be produced by the injection of dead virulent pneumococci

DISCUSSION ON PNEUMONIA

Dr E W Quick Appleton, said that pneumonia is a general disease whose prognosis depends not on the amount of lung involvement, but on the virulence of the organism The question of opsonins promises important ultimate results in treatment Dr Rosenau has shown that the blood in pneumonia patients exhibits a higher percentage of acid than in health, and therefore the alkaline treatment seems to be established on a reasonable basis

Dr L F Jermain, Milwaukee said that, since it is now established that pneumonia is an acute infectious process, and that the changes in the lungs are merely local manifestations of general infection, it should not be treated as a local disease but along the lines of other acute infectious diseases, and no consideration paid to merely local conditions Pneumonia should be regulated by local health authorities the same as other infectious diseases are Our hope in the future treatment of pneumonia lies along the lines of the opsonic theory

Dr E. J Brown, Decatur, Ill, said that the opsonic theory explains the success of the treatment of passive hyperemia in joint disease, through increasing locally the opsonic index, and suggests new lines of treatment in various diseases At present, however, owing to the complexity of technic the general practitioner can not do opsonic work

Dr Potter emphasized the point that the cause of pneumonia is bacterial infection, and that it should therefore be treated as a general and not as a local infection

Dr Wolf referred to the inefficiency of the drug treatment and the great injury it does in destroying the only safeguard that the body has in combating the infection, the opsonins

Intussusception

Dr C L Combs Oshkosh, said that this condition is rare in adults and is difficult of diagnosis, the chances of recovery are small especially in gangrenous cases He reported a case, in an adult female of four days' duration, in which resection was performed and, although gangrene had set in before operative interference was determined on, yet recovery resulted

Venereal Diseases and Marriage

Dr D J Hayes, Milwaukee, said that a syphilitic subject has no right to marry unless his disease dates back four or five years and all this time has been devoted to a careful and scientific treatment of the disease Urethral folliculitis is one of the most insidious and important conditions that occur in gonorrhea About 40 per cent of all gonorrheas affect the prostate The physician should be as cautious in assuming the responsibility of advising those who have suffered from gonorrhea, in the matter of matrimony, as he should be in advising syphilitics under similar circumstances, and the rule laid down by Ulzmann should be followed, viz, that there must be absence of gonococci, absence of pus corpuscles and absence of periurethral complications before marriage is permissible

DISCUSSION

Dr. Herman Reineking, Milwaukee, said that persons afflicted with venereal diseases should be warned not to marry until cured Many cases of puerperal sepsis are due to gonorrheal affection

Dr Byron M Caples, Waukesha, said that he believes that a man who has once had syphilis should never be permitted to marry, and indeed should be sterilized

Symposium on Headache

Dr L F Jermain, Milwaukee, discussed the classification, cause and treatment of headache, including headache due to renal insufficiency, defective metabolism, toxins, drugs, migraine, meningitis, cerebral syphilis, and arteriosclerosis Successful treatment depends on the correct diagnosis of the underlying causes of the headache

Dr B M Caples discussed the subject from the standpoint of the neurologist, confining himself to headaches resulting from neurasthenia, hysteria, epilepsy and various forms of neuritis

Dr C D Conkey, Superior, read a paper on headache from the point of view of the nose and throat specialist Malformations and inflammations in the nose cause headaches He described a case in which headache was cured by removing a large club shaped projection from the middle turbinate Where respiration is obstructed headache may result, especially in the case of adenoid vegetations in the vault of the pharynx

Dr Henry B Hitz, Milwaukee, discussed headache of otic origin He described the various forms of otic headache and concluded by saying that headache from disease in the region under discussion has not been of great importance except as a means of attracting attention to the affected region

DISCUSSION

Dr L F Bennett, Beloit, said that headache is usually simply a symptom, and the real cause or combination of causes should be determined, which is often very difficult

Dr J M Dodd, Ashland, said that headache is simply a symptom of some disturbance occurring perhaps in a remote part of the body

Simple Ulceration of the Bladder in the Female

A paper by Dr M W Dvorak, La Crosse, was read by Dr Edward Evans The existence of ulcer of the bladder is generally believed to be of rare occurrence, simply because of failure to make careful examination The cystoscope, which is the only means of making diagnosis, should be used in all cases in which a vesical affection is more than transient Curettage and topical treatment should be employed in these cases

Heart Disease

The annual address in medicine was delivered by Dr George Dock, professor of medicine in the University of Michigan, on "Recent Advances in the Pathology and Therapeutics of Heart Disease" He said that we are entering on a new era in the investigation of diseases of the heart All morbid phenomena, functional as well as structural, are being thoroughly investigated He sketched the history of the study of heart disease We have learned that the heart is more than a crude propulsive organ It narrows orifices, fixes valves, directs currents, and has a marvelous range of adaptability Valvular lesions are rapidly becoming better understood, we are starting on a new road in the study of muscular disease and beginning to understand the reason of disturbances of rhythm The history of the fibers known as the Bundle of His is remarkable and led to the development of the myogenic theory of the heart's action Professor Erlanger has made brilliant investigation into the function of this bundle The essential functions of heart muscle tissue are automatic stimulus production, conductivity, irritability and contractility With our present light we can study cardiac arrhythmias to much better advantage than we could with the physiology of a few years ago Arrhythmia may be classified into respiratory, extrasystolic, fibrillary contraction, heart block, hemisystole and alternating systole With reference to prognosis a good deal has been said and more can be surmised In some cases the heart is the primary seat of disease and so causes the functional anomaly This is true generally in extrasystole, irregular pulse, ventricular asystole, heart block and alternating pulse In some of the other irregularities the cardiac abnormality is the result of some other, perhaps distant, lesion or functional disturbance In some cases the part of the heart affected can be stated, while in others it can not The subject is new The special causes of the anomaly are often impossible of demonstration The study of cardiac arrhythmias will rarely give us in a short time a diagnosis we could not have made without such study, but it will add much to our knowledge of disease phenomena and to the accuracy of our investigation of the individuals we have to treat in practice Individualization is necessary in treatment Preventive treatment is the first need In the treatment of irregularities the main thing is to abstain from cardiac remedies until complete diagnosis has been made In some cases in fact, the most important thing is to stop medication, as in patients with compensated valvular lesion who have digitalis irregularities In other cases indirect treatment is necessary, as in gastric or intestinal reflex arrhythmias arteriosclerosis and neuroses of a general kind

Nerve Lesions Complicating Simple Fractures of Long Bones and Their Treatment.

Dr Karl Doege, Marshfield, said that these complications may readily occur, but are often overlooked The nerve tissue is peculiarly sensitive to even a moderate degree of pressure Traumatism to nerves is immediate or remote Immediate traumata are contusions or divisions of nerves, remote traumata are due to scar tissue formation Differential diagnosis must be made between contusions and divisions of nerves Contusions should be treated by expectancy, massage, galvanism, etc, and divisions by suture and end to end approximation

DISCUSSION

Dr Herman Reineking, Milwaukee, recalled only one such case in his experience

Dr E S Hayes, Eau Claire, called attention to the fact that a pressure apparently insignificant may cause nerve paralysis lasting for a considerable time

Dr G Perry, Amery, said that an extensive loss of nerve function might occur without permanent injury to the nerve

Management of Labor

Dr F W Epley, New Richmond, said that labor is a natural physiologic process which often should not be interfered with If labor progresses till the head is resting against the perineum, terminate the case at the end of a couple of hours by the application of simple forceps Do not use the lumbering creations with high sounding names which are now on the market Most of them are unnecessary and their use pernicious Employ chloroform only during the last few moments of extreme suffering Toughen the nipples by having them thoroughly massaged some time before labor

DISCUSSION

Dr J P Cox, Superior, recommended having bedding and cloths made aseptic and using the Kelly pad The husband is more trouble than he is of aid and should be kept out of the way entirely Put a brace at the head of the bed for the patient to grasp Repair even the slightest lacerations

Dr Hugo Philler, Waukesha, said that the use of chloroform is of prime importance and is without bad results He prefers the Vienna mixture of 11 parts of ether, 12 parts of alcohol, and 77 parts of chloroform, by weight

Dr Julius Noer, Stoughton, declared the use of chloroform dangerous, it should be watched as carefully in labor as elsewhere, its use is necessary in only a few cases

Dr A D Gibson, Park Falls, recommended that lacerations should not be repaired unless they involve the muscular tissue He uses chloroform as a rule in labor

Gallstones

Dr F Gregory Connell, Oshkosh, read a paper on the removal of gallstones from the second and third portions of the common bile duct A comparison of the retroduodenal with the transduodenal approach leads to the conclusion that the latter is generally the better method The essayist presented a report of a successful case of transduodenal choledochotomy, together with an analysis of collected cases

DISCUSSION

Dr Edward Evans, La Crosse, called attention to the fact that the rarity of the condition is due to the anatomic formation of the duct

Dr Connell replied to a question that the time required for the formation of gallstones is in doubt, but that Dr Mayo thinks that they are formed in a very short time when proper conditions are present

Early Diagnosis of Gastric Carcinoma

Dr William Ackermann, Milwaukee, said that early diagnosis is of prime importance and can be based on no one symptom, but must be founded on the symptom complex, including loss of appetite nausea, eructation of gas, epigastric distress, anemia, emaciation, cachexia, age, heredity, previously existing gastric ulcer, examination of stomach contents, lactic acid in place of HCl, the Oppler Boas bacilli in place of sarcinæ, and constant finding of occult blood Pyloric and cardiac carcinoma may frequently be diagnosed early because of the presence of obstruction, but this is not the case with interostial carcinoma

DISCUSSION

Dr F Gregory Connell, Oshkosh remarked that one third of all carcinomata occur in the stomach, and 60 per cent of carcinomata of the stomach show a previous history of gastric ulcer Complete removal of the neoplasm is the only hope for a cure After arriving at a suspicion of gastric cancer exploratory laparotomy should be performed

Prevalent Ocular Diseases

Dr N M Black, Milwaukee, gave, for the benefit of the general practitioner, a description of the commonly occurring diseases of the eye, including blepharitis, hordeolum, abscess, chalazion, corneal ulceration, dacryocystitis, blennorrhea, conjunctivitis, ophthalmia, neonatorum, trachoma, scleritis, keratitis, iritis, cataract, glaucoma and squint, together with the approved modes of treatment employed

DISCUSSION

Dr C D Conkey, Superior, considers blepharitis a most common, and one of the most obstinate, forms of eye diseases, especialy when ulcerative. Lachrymal disease following hypertrophic catarrh is also obstinate There is no loss of sight in ophthalmia neonatorum except through failure of technic, and especially through lack of cleanliness in the eye Nitrate of silver is the ideal treatment A strong objection to argyrol is that it decomposes rapidly and thus deteriorates The destruction of the eye in adults from gonorrheal ophthalmia is something frightful Phlyctenular keratitis and conjunctivitis are readily curable by proper diet

Dr. J Steele Barnes, Milwaukee, dwelt on the importance of the study of the pathology of the eye When the pathology is established, treatment is easy Strange to say, trachoma has largely disappeared from Wisconsin Cleanliness is the important point in gonorrheal conjunctivitis

Dr Black said that the orthoptic treatment of squint must be carried over a long period of time before results are obtained, but if the treatment is begun before the child has reached the age of 7 the squint can be corrected without operative procedure

X-Ray Injuries

Dr Otto H Foerster, Milwaukee, read this paper We are sufficiently informed as to the conditions leading to the development of *x* ray burns to avoid producing them in almost all instances The distinctive type of burn involves the subcutaneous tissue, produced ulceration which may be very deep, is extremely painful, and successful treatment is difficult X ray burns are due to the actinic properties of the rays themselves Idiosyncrasy to the rays exists Patients have often been recklessly exposed at close range for periods varying from twenty to thirty minutes, on successive days, and this practice invariably leads to severe dermatitis or to the most terrible type of burn Recklessness and unfamiliarity with proper technic have done much to bring discredit on a method which, in skilled hands (to whose use the *x* ray should be confined), is as safe a procedure as any in medicine

DISCUSSION

Prof Charles R. Bardeen, Madison, said that the *x* rays are extremely dangerous except in the hands of skilful operators

Dr George Saunders, Superior, reported good results from the *x* ray in nearly all kinds of skin diseases, in mild cases of epitheliomata, in enlarged cervical glands and in incipient tuberculosis

Dr Foerster emphasized the fact that proper protection of operator and patient excludes the possibility of danger The *x* ray is contraindicated in any skin condition which can be cured by other means without leaving a scar

The Physician in His Relation to Contagious Diseases and the Public

Dr C A Harper, Madison, emphasized the duty of the practitioner to diagnose contagious diseases as promptly as possible, to assist the authorities in the proper enforcement of all sanitary and hygienic measures, and to insist on quarantine immediately after diagnosis Protection to the public is of primary importance The physician, public health officials and the public should work in harmony and with a view to the extinguishment of contagious disease

DISCUSSION

Dr H J Orchard, health officer of Superior remarked that physicians are too apt to look to the protection of their patients rather than to the protection of the public In many instances it is very difficult to secure isolation in contagious diseases There is lack of harmony between the health authorities and the people The important point is to avoid the exposure of the public But health officials should not be unreasonable with respect to quarantining flat buildings, hotels, etc

Prof Charles R Bardeen emphasized the point that the treatment of quarantinable cases is really secondary to the protection of the public It is the physician's duty to report contagious diseases to the proper officials immediately and then it lies with the health officer to enforce the quarantine

Dr John Baird, Superior, opposed quarantining in smallpox, as the public can protect themselves by vaccination

Dr Edward Evans, La Crosse endorsed the position of Dr Baird and thought the society should soon go on record to that effect Health officials should always be well qualified experts Schools and school children especially should be frequently and thoroughly examined

Dr. Foerster thought vaccination should be followed up, if that is done immunity against smallpox will be absolutely secured

Dr Julius Noer, Stoughton, advocated the abandonment of quarantine for smallpox. Quarantine laws in contagious diseases are not obeyed because the people do not favor them

Dr Herman Gasser, Platteville, favored compulsory quarantine as long as vaccination is not compulsory

Dr William B Eicher, Boscobel thought the society should take a firm stand for vaccination and pay less attention to quarantining for smallpox This would remove the skepticism of the people regarding the efficacy of vaccination

Variola

Dr J P Cox, Superior, read a paper on this subject Vaccination renders the subject absolutely immune to smallpox Every vaccination can and should be made aseptic But until non belief in vaccination is overcome, vaccination and quarantine should work hand in hand to afford the maximum of immunity The manufacture of vaccine should be more carefully supervised by the government in order to prevent the distribution of impure virus

DISCUSSION

Dr H J O'Brien, Superior, said the physician should follow up his vaccination If this were done there would be less skepticism as to the value of vaccination

Dr W T Sarles, Sparta, declared that vaccination affords absolute immunity, but quarantine should be retained until compulsory vaccination is established In vaccinating, wash the arm with warm water and soap and dry it with gauze, put the lymph on, scarify the arm, let the case go without dressing, for secondary infection can not take place for at least four days, at the end of four days a light gauze dressing or a gelatin shield may be put on Secondary infection never occurs until the subject gets a sore arm

Dr Eicher expressed the hope that there will be some change made in the quarantine laws which would give the people an opportunity to realize that the medical profession of the state have absolute faith in vaccination

Dr E L Boothby, Hammond, opposed the abolition of quarantine in smallpox cases Faulty technic has shaken the faith of the people in vaccination Instruments should be as thoroughly sterilized as in surgical cases, the arm should also be sterilized There is much worthless lymph on the market

Dr C A Armstrong, Boscobel argued for simplicity of technic A little sterile cotton sterile gauze, zinc oxid ointment, the needle that comes with the tube, and a match, are all one needs

Dr Pepin thought the health department would furnish uniform vaccination certificates, if that were done the work would be more carefully looked after and successfully followed out

Dr. Foerster said that if quarantine is abolished Eddyites and others who refuse vaccination will spread the disease. Many graduates of medical schools have never seen a case of contagious disease How can they make a differential diagnosis? In vaccinating little children it is well to use a 15 per cent solution of caustic potash to dissolve off the superficial layers of the skin

Dr Harper felt that the objection to raising quarantine in smallpox is the injustice it would do to innocent children However, there is a law now in effect which practically makes vaccination of school children compulsory It is not safe to rely on disinfection Many of the disinfectants on the market are worthless

Direct Transfusion of Blood

The annual address in surgery by Dr George W Crile, Cleveland, professor of surgery in the medical department of the Western Reserve University, related to certain clinical and experimental observations on the symptomatology and treatment of hemorrhage and some observations on the direct transfusion of blood The paper treated of the technic, mechanics and therapeutics of the subject, and eight cases were described In these cases the direct transfusion of similar blood has afforded (a) complete relief for acute hemorrhage, (b) complete stoppage of hemorrhage in four cases of chronic pathologic hemorrhage from the bowels and partial stoppage and relief in a similar case, and (c) complete stoppage of uterine, nasal, subcutaneous and rectal hemorrhages in a case of carcinoma of the gall bladder, with sufficient stimulation of the patient to permit an exploratory laparotomy

Symposium on Puerperal Sepsis

The diagnosis and clinical history were discussed and cases described by Dr George Saunders, Superior

Dr J M Dodd, Ashland, discussed the surgical treatment He said that here is a septic wound to treat and one must (a) remove the septic material as far as possible, (b) neutralize the septic matter that remains, and (c) provide drainage The septic membrane should be handled very gently Irrigation should be employed Iodoform is an ideal remedy

Dr H L Rosenberry, Wausau, said that the serum treatment, begun early, is destined, if we reason from analogy, to be ideal

Dr Herman Gasser Platteville, read a paper on what does disease mean

Approve State Medical School

The following resolution was adopted

Resolved That the State Medical Society of Wisconsin heartily endorses the action of the state legislature in establishing a college of medicine at the University of Wisconsin and the proposed plan of the regents to develop the important departments of pharmacology and pathology

PROCEEDINGS OF HOUSE OF DELEGATES

Dr W T Sarles, reported on the work of the House of Delegates of the American Medical Association at Atlantic City

Dr F T Boothby Hammond presented reports from the various councilors, showing an improved condition of affairs

Progress in Medical Legislation

The present members of the committee on public policy and legislation were re elected Dr J J McGovern presented a report of the work done during the past year He said that great progress has been made in medical legislation Two bills were passed forbidding newspaper advertising with reference to diseases of the sexual organs these since July 1 have been obeyed One of the bills forbids the newspaper from taking the advertisement and another forbids any one from placing any such advertising A third bill embodies the Indiana law regarding the definition of medicine

To Organize Medical Defense.

A committee was appointed to consider the question of medical defense and to report at the next meeting The committee consists of Drs G E Seaman, J J McGovern and H B Hitz, Milwaukee, Edward Evans, La Crosse, Julius Noer, Stoughton, L H Pelton, Waupaca, and C S Sheldon, Madison

Dr Noer introduced the following resolutions, which were adopted

Resolved That the committee on medical defense be and hereby is instructed to prepare resolutions for submission to the county societies for a referendum vote on the question of protective insurance recommended by Dr Sheldon's report for 1907 Be it further

Resolved That in case the vote by the county societies is favorable then the above-named medical defense committee hereby is empowered and instructed to proceed with the organization of an insurance association in connection with the State Medical Society Provided that such organization shall not become operative till after the question has been submitted to and passed on by the council of the Wisconsin State Medical Society at its meeting in January 1908

Election of Officers

The following officers were elected President, Dr W T Ground, Superior, vice presidents, Drs Byron M Caples Waukesha, Herman Gasser, Platteville, E S Hayes Eau Claire

Milwaukee was selected as the place of holding the next annual meeting, time to be fixed later

Three members of the council were appointed Dr C A Armstrong of the Fourth, Dr Dewey of the First and Dr G T Dawley of the Ninth district Dr L H Pelton of Waupaca was elected a delegate to the American Medical Association Dr G Windesheim was elected his alternate, Drs Sarles and Caples holding over Dr J V Mears was re elected councilor from the Fifth district, and Dr C J Combs, Oshkosh, was elected councilor of the Sixth district The resignation of Dr W T Sarles, of the Seventh district, was accepted and Dr Edward Evans was appointed in his place

On motion the action of council to pay expenses of delegates to Council on Medical Legislation, A M A, was approved and Dr G E Seaman was elected delegate

The annual report of the committee on laws and legislation was submitted in executive session and accepted

A motion made by Dr Sarles was seconded and carried unanimously that the council be empowered to make such per capita assessment as they see fit not to exceed one dollar to defray the expenses of the legislative committee

By a unanimous vote the contract with the *Wisconsin Medical Journal* for the publication of the proceedings of the society was renewed for another year

Resolutions

The following resolutions were unanimously adopted

Whereas Certain old line life insurance companies insist on the payment of but $3 00 for examination including the chemical examination of urine be it

Resolved That it is the sense of this society that no such examination should be made for less than $5 00

Resolved That it is the sense of this society that the minimum fee for examination in assessment societies should be $2 00

Whereas The Public Health Defense League has been organized for the purpose of protecting against imposition by quacks and patent medicine concerns therefore be it

Resolved That the State Medical Society of Wisconsin congratulates the Public Health Defense League and pledges its support in furtherance of these objects

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Danger of Introduction of Sleeping Sickness Into India—Consul General Michael at Calcutta reports that the comparatively recent introduction of bubonic plague into India (1897), and its rapid and fatal spread through the country, have rendered Europeans and Hindus uneasy on the subject of sleeping sickness Owing to the constant communication between India and Africa the going and returning of native Hindus who emigrate thither to work for a time and then return to India, it is feared that the germ of the disease may be brought back by returning Hindus and thus another scourge be introduced into the country For this reason the deliberations of the African colonial conference now being held in London on the subject of combating disease, are of uncommon interest to the people of India

Book Notices

TICS AND THEIR TREATMENT By Henry Meige and E Feindel Translated and Edited with a Critical Appendix by S A K Wilson M A M B B Sc Resident Medical Officer National Hospital for the Paralyzed and Epileptic London. with a Preface by Prof Brissaud Cloth Pp 386 Price, $2.50 New York William Wood & Co 1907

"*Les Tics et Leur Traitement*" was first published in 1902 and was quickly recognized as an authority It is a logical, learned and practical exposition of a most complicated subject and a careful study of it will go far toward preventing the blunders, so commonly observed, in the differential diagnoses between a simple muscular spasm, a tic and a chorea As these all differ in their etiology and nature, a correct diagnosis is an absolute *sine qua non* for correct treatment and a favorable prognosis By clearly defining the term tic, giving it a narrow and precise meaning, and indicating its uniform pathogenesis and essential nature, the authors have done valiant service in dissipating somewhat the confusion surrounding a certain type of muscular jactitation A tic is not the same as a spasm or a chorea, though superficially it bears a close resemblance to both In the author's own words, "a tic is a co ordinated purposive act, provoked in the first instance by some external cause or by an idea, repetition leads to its becoming habitual, and finally to its involuntary reproduction without cause and for no purpose, at the same time as its form, intensity and frequency are exaggerated, it thus assumes the character of a convulsive movement, inopportune and excessive, its execution is often preceded by an irresistible impulse, its suppression associated with malaise. The effect of distraction or of volitional effort is to diminish its activity, in sleep it disappears It occurs in predisposed individuals who usually show other indications of mental instability" (p 260) As tic is thus seen to be "a psychomotor affection" with "two inseparable elements in its constitution, a mental defect and a motor defect," it is distinguishable from a mere spasm, which "is the motor reaction consequent on stimulation of some point in a reflex spinal or bulbo spinal arc" (p 37) as from a chorea with its "inco ordination," its "amorphous indefinable and erratic" muscular play, its want of "succession of similar movements," its tendency to "unilaterality" and other special features (p 280) In consonance with this conception of tic, the authors explain the peculiarly discouraging prognosis belonging to it and its proneness to relapse or reappear in another form Under prolonged disciplining and re educational treatment, to which the authors, of course, give first place, they find that the prognosis is far from being as bad as heretofore declared to be It "depends solely on the mental state of the patient" (p 293) Beginning with an elaborate history of a typical case—the report occupying the entire first chapter and being largely autobiographic in character—the authors take up the etiology, pathology, symptomatology, diagnosis and treatment of the tics in the remaining eighteen chapters Abundant illustration is made from the writers' own large clientele and the case reports found in the current literature In a masterly and attractive way the argument, based on close logic, deep psychology and modern scientific physiology, moves steadily and convincingly along until in the end one is all but forced to believe that at last the final word has been said on these perplexing tics

PULMONARY TUBERCULOSIS Its Modern and Specialized Treatment. By Albert Philip Francine A.M M.D., Instructor in Medicine University of Pennsylvania Second Edition Illustrated Cloth Pp 266 Price $2 00 Philadelphia and London J B Lippincott Co 1907

To the specialist this book may seem to contain little not already known to him, to the general practitioner, however, it will prove of great value We differ with the author in his statement that the general practitioner can not treat tuberculosis with success because he is not qualified to do so With such a book as this is a guide, the general practitioner will surely be able to treat the disease with a reasonable degree of success if he is possessed of an average amount of diagnostic skill, common sense, tact, etc The modern treatment of pulmonary tuberculosis is systematically and carefully considered The importance of rest when there is fever, the true place of exercise, of pulmonary gymnastics and of massage, the necessity of careful attention to the diet and of individualized forced feeding, the beneficial influence of sunshine, fresh air and of suitable climate, all these questions are discussed in detail and with a sane, judicial decisiveness The use of tuberculin as an aid to diagnosis is considered, as well as its therapeutic use, and due emphasis is laid on the necessity of employing small initial doses for either purpose Serotherapy, including the use of sera for combating secondary infections, e g, streptococcic, is taken up, and also the use of drugs and the treatment of special symptoms such as cough, pain, hemoptysis, night sweats, etc It is somewhat surprising after reading the author's views as to diet and hygiene, views with which we must heartily agree in the main, to note the importance he attaches to the use of drugs Creosote and nitroglycerin are advocated most warmly, and the latter given, as it seems to us, with unusual freedom on slight indications

A chapter on general considerations and one on prophylaxis close the book except for the reprinting of the excellent "Hints and Helps for Tuberculous Patients," by Charles Minor of Asheville, N C

The views of other American specialists in tuberculosis are freely cited and occasionally those of continental writers, especially those of Cornet The book is written in an unusually pleasing style that makes it easy and enjoyable reading A few typographic errors that perhaps, ought not to be expected in a second edition, were noted The print is clear the illustrations well executed and instructive The book will do much good if it shall come into the hands of those who, in office, hospital or house to house practice, have to decide on the best plan of treatment for this all too common disease It is a book, too, that can be read and studied by the intelligent layman who has tuberculosis or in whose family there is a case of tuberculosis, he will surely gain a clear conception of what his physician is striving to do in the way of treatment and will more efficiently cooperate with him in his efforts to effect a cure

NEPHRITIS A Manual of the Disease Commonly Called Nephritis or Bright's Disease and of Allied Disorders of the Kidneys By Seelye W Little M D Cloth Pp 134 Price $1 25 New York The Grafton Press 1907

This is an odd mixture of science, common sense pseudo science and evolutionary theories applied to the subject of Bright's disease It is largely taken up with telling how little is really known about nephritis and how mistaken most of us are in our conceptions of the disease and treatment of it There is some truth in it, sometimes epigrammatically put but most of the space is taken up with stating and restating that civilization with its meat, alcohol, clothes and strenuous physical and mental life is responsible for nearly all cases of Bright's disease, and that a temperate life with avoidance of excess of food, especially proteid food—and with care as to environment, will help in warding off Bright's disease or will enable a kidney that is incompetent to perform the unreasonable task ordinarily put on it by civilized man, to be able to functionate if the exorbitant demand be lessened Even though much that its stated as new is in reality trite, and in spite of the fragmentary and rambling presentation of the subject, there is yet enough of forcibly put truth in the book to warrant the spending of an hour or two in its perusal The discussion of the dietetics of nephritis taken largely from von Noorden and Chittenden, will appeal to many who wish exact statements as to food composition and nutrient value

ESSENTIALS OF CHEMICAL PHYSIOLOGY for the Use of Students By W D Halliburton M D LL.D F R S Fellow of the Royal College of Physicians Sixth Edition Cloth Pp 258 Price $1 50 New York and London Longmans Green & Co, 1907

Although the original plan of the book, the arrangement into twenty six lessons, remains unchanged, the author has subjected the text to such revision as was necessitated by the increased and more exact knowledge of chemical physiology The chapter on protein has undergone the greatest change, and is far more extensive than it was in previous editions The sections relating to coagulation of the blood and to respiration have also been carefully revised Many new illustrations are added, thus increasing the value of the book The appendix is deserving of special mention, inasmuch as it details the use of apparatus which should be found in the laboratory of every practitioner

Marriages

John Emerson Heald, M D, to Miss Frances Hartley, both of Comanche, Iowa, August 14

Charles J Sellars, M D, Pittsburg, Pa, to Miss Alice J Baldwin, at Baltimore, August 15

Thornton C Metz, M.D, Cumberland, Md, to Miss Rose Dickel, at Cumberland, August 14

Herbert N Leete, M D, Algoma, Wis, to Miss Ruth I Eaton, at Valparaiso, Ind, June 26

William J Lavin, M D, to Miss Margaret Gallaher, both of Lexington, Ky, at Cincinnati, July 2

W Otto Weiskotten, M D, Utica, N Y, to Miss Sadie I Pendleton of Rochester, N Y, August 6

W Waters Stonestreet, M D, Ohiopyle, Pa, to Miss Old Summit Trauty, at Baltimore, August 14

S Le Roy Robinson, M D, to Miss Rena Estelle Kiel, both of Baltimore, at Portland, Maine, August 8

D Egbert Gurney, M D, Newburg, Md, to Miss Mary Eleanor McShane of Baltimore, August 14

Henry L Dearing, M D, Braintree, Boston, to Miss Clara Lincoln Robbins of Cambridge, Mass, recently

Benjamin T Rafferty, M.D, to Miss Lizzie Dean, both of Cloverport, Ky, at Cannelton, Ind, August 18

William R. Fringer, M D, to Miss Alma M Barter, both of Rockford, Ill, at Grand Cascapadia, Que, August 20

Howard A Hanaford, M D, Newport, N H, to Miss Lida Estelle Hilton of Brooklyn, N Y, at Newport, June 17

Francis Le Baron Jenney, M D, Chicago, to Mrs Winifred Ament Morgan of Indianapolis, Ind, in Chicago, August 21

Deaths

Theophilus O Powell, M D University of Georgia, Medical Department, Augusta, 1859, a member of the American Medical Association, superintendent of the Georgia State Sanitarium, Milledgeville, who for the last 28 years had given his efforts to the up building of that institution, president of the Medical Association of Georgia in 1887, once president of the National Medicolegal Society and a member of the American Medico-Psychological Association, a Confederate veteran, died at Tate Springs, Tenn, August 18, from pneumonia, after an illness of ten days, aged 70

Louis A Harris, M D Albany (N Y) Medical College, 1884, for several years health officer of the town of Newburgh, N Y, and physician to the City and Town Home and Children's Home, assistant surgeon, with the rank of first lieutenant, and assigned to the Tenth Separate Company, N G N Y, died at his home in Newburgh, from cirrhosis of the liver, August 17, after an illness of more than two months, aged 48

Nathaniel A Morgan, M.D University of Pennsylvania, Department of Medicine, Philadelphia, 1847, assistant surgeon in the Third Louisiana Infantry and Fifth Georgia Infantry, C S A, during the Civil War, and since that time a practitioner of Texas, president of the board of examining physicians of the thirteenth district for five years, an invalid for the last 12 years, died at his home in Fort Worth, March 14, aged 84

Seneca D Powell, M D University of Vermont, College of Medicine, Burlington, 1869, vice president of the Pan-American Medical Congress in 1895, vice president of the Medical Society of the State of New York in 1898, secretary of the faculty and senior professor of surgery in the New York Post Graduate School, died at his home in Greenwich, Conn, August 25, after an illness of three years, aged 60

Charles Stewart Kittredge, M D College of Physicians and Surgeons in the City of New York, 1863, a member of the Medical Society of the State of California and the Alameda County Medical Society, a practitioner from 1864 to 1887 in Hawaii, died at his home in Santa Barbara, Cal, January 10, from subacute pneumonia, after an illness of ten days, aged 74

Joshua F Ensor, M D University of Maryland School of Medicine, Baltimore, 1862, major and surgeon in the Army during the Civil War, thereafter internal revenue collector and collector of customs at the port of Charleston, S C, and for the past ten years postmaster of Columbia, S C, died at his home in that city August 16, aged 71

Solon D Martin, M D Transylvania University, Medical Department, Lexington, Ky, a practitioner of Saline County, Mo, since 1853, surgeon, with the rank of major, in the Confederate army throughout the Civil War, died in the University Hospital, Kansas City, Mo, August 10, from paralysis, after an illness of three years, aged 82

Patrick J Prendergast, M D Jefferson Medical College, Philadelphia, 1873, director of the public library board of Brooklyn, N Y, died in the City Hospital Cork, Ireland, August 16, from injuries received by a fall from a companion ladder on the steamer *Cedric*, on which he sailed from New York two weeks before, aged 57

Leander J Jones, M.D Missouri Medical College, St. Louis, 1876, a member of the Missouri State Medical Association and Jackson County Medical Society, for 10 years president of the Clay County (Mo) Medical Society, and a pioneer practitioner of Kansas City died at the home of his son in that city, August 13, aged 79

William Greaves, M D University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1870, a member of the Minnesota State and Rice County medical societies, and one of the most prominent practitioners of southern Minnesota, died at his home in Northfield, in July, aged 64

Charles Stewart Wurts, M D Jefferson Medical College, 1854, for several years treasurer of the Philadelphia College of Physicians, for the last 12 years vice president of the Cambria Iron and Steel Company, died at the home of his daughter, in Media, Pa, August 14, aged 78

Samuel Beyea, M D College of Physicians and Surgeons in the City of New York 1892, of New Rochelle N Y, a member of the American Medical Association, died in the Roosevelt Hospital, New York City, August 18, after an operation for the removal of gallstones, aged 45

Jacob Rinehart, M D University of Pennsylvania, Department of Medicine, Philadelphia, 1858, twice a member of the Maryland legislature and judge of the Orphans' Court, died at his home in Frizellburg, Md, August 17, from cerebral hemorrhage, aged 73

Amasa E Field, M D Rush Medical College, Chicago, 1895, a member of the Illinois State and DuPage County medical societies, died at his home in Warrenville, Ill, August 23, from tuberculosis, after an illness of more than two years, aged 48

Robert S Beckham, M D Medical College of the State of South Carolina, Charleston, 1858, for many years a practitioner of Pleasant Hill, S C, died at his home in Kershaw, S C, from paralysis, August 16, after a prolonged illness

Milton Blatchley Axtell (Registration, Wisconsin, 1899), a member of the Wisconsin State and Buffalo Pepin Counties medical societies, for half a century a practitioner of Pepin, died at his home in that village, August 3, aged 81

Ernest E Knauer, M D Marion Sims College of Medicine, St Louis, 1896, of Duquoin, Ill, county coroner for several years, died in Denver recently, after an illness of several months, and was buried at Duquoin, August 21

Morris Shanks, M D Baltimore University School of Medicine, 1891, of Baltimore, died at the Baltimore City Hospital, August 13, three days after an accidental fall in which he suffered a fracture of the skull, aged 38

August Sander, M D Medical College of Ohio, Medical Department University of Cincinnati, 1895, (Examination, Missouri, 1883), a practitioner of Marble Hill, Mo, for 51 years, died at his home, August 12, aged 73

M D Hopper (Years of Practice, Ky), a member of the Kentucky State and Russell County medical societies, and a practitioner of Russell County for 47 years, died at his home in Jamestown, August 19, aged 74

Paul S Anderson, M D Kentucky School of Medicine, Louisville, 1877, of Redlands, Cal, was found dead in Cajon Pass, Nev, by campers, August 9, under circumstances which point to death by violence, aged 51

Thomas Worthington Henry, M D Kentucky School of Medicine, Louisville, 1890, a Confederate veteran and a pioneer practitioner of Dallas County, Texas, died at his home in Dallas, March 17, aged 69

William B Ray, M D University of Tennessee, Medical Department, Nashville, 1892, died at his home in Scottsville, Ky, August 15, from cerebral hemorrhage, after an illness of only a few hours, aged 48

Ezra Walker Abbott, M D University of Vermont College of Medicine, Burlington, a veteran of the Civil War of Concord, N H, died at the home of his sister, in Contocook, N H, August 9, aged 86

Thomas B Williams, M D Western Reserve University Medical College, Cleveland 1864, for 43 years a practitioner of Angola, Ind, died suddenly at his home in that city, August 16, aged 68

Eliphalet Wright, M D Berkshire Medical College, Pittsfield, Mass, 1841, an active practitioner of Berkshire County, Mass, for 66 years, died at his home in Lee, August 22, aged 90

Thomas B Riddick, M D College of Physicians and Surgeons, Baltimore, 1893, died at his home in Woodville, N C, March 4, from nephritis, after an illness of six months, aged 40

James M Young, M.D California Medical College, San Francisco, 1884, for several years a practitioner of Oakland, died at his home in Alameda, Cal, August 14, aged 63

John W Beck, M D Medico Chirurgical College of Philadelphia, 1887, died recently in his home in Peckville, Pa, from septicemia due to an infected wound of the hand

Cornelius W Burrows, M.D Detroit (Mich) College of Medicine, 1871, died at his home in Detroit from heart disease, August 13, after a long illness, aged 68

R F Burge, M.D Kentucky School of Medicine, Louisville, 1898, died at his home at Roscoe, Texas, August 9, after a lingering illness, aged 48

Francis J Ducat, M.D Detroit (Mich) College of Medicine, 1896, of Detroit, died suddenly in New York City, August 9, aged 39

Robert H Westfelt, M D Beaumont Hospital Medical College, St Louis, 1888, died at his home in Chicago, August 19, aged 55

James Walkley Sweet (License, Conn, 1893), died at his home in New Haven, Conn, August 18, aged 54

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Massachusetts Board of Registration in Medicine, State House Boston September 10-12 Secretary Dr Edwin B Harvey, 159 State House, Boston

Iowa State Board of Medical Examiners, Capitol Building, Des Moines September 17 19 Secretary, Dr Louis A Thomas, Des Moines

Rules Governing Examinations in Minnesota.—Dr W S Fullerton, secretary of the Minnesota State Board of Medical Examiners, states that the following rules govern examinations for license to practice medicine in that state

1 An examination is required before a license is granted to practice medicine in Minnesota The law requiring such procedure went into effect July 1, 1887, and has been enforced since that date

2 Each applicant is required to make an affidavit setting forth his age, place of residence, preliminary education, time and place of each course of medical lectures, and date of graduation The affidavit must be corroborated by the exhibition of his diploma or a certificate from the dean of the medical college showing that he has completed the prescribed number of courses and is a candidate for graduation Graduates of medical colleges granting advanced standing for work done at other than medical colleges shall not be eligible to the examinations given by this board

Beginning June, 1912, all applicants for the examination for license to practice medicine in this state, graduating in that or a subsequent year, must have satisfied all the entrance requirements, and completed the first two years' work of the College of Science, Literature and the Arts of the University of Minnesota, or present credits for a course elsewhere which is ruled by the said college as equivalent thereto, provided that a medical student may be matriculated with a condition in not more than one full year subject or two half year subjects, and provided further that the condition or conditions be made up before beginning the second annual medical course counted toward the medical degree

Minnesota medical schools and Minnesota medical students shall not be discriminated against by the recognition of any medical school outside the state whose minimum preliminary requirements standard is less than that fixed for Minnesota

3 Each applicant, if he graduated or completed his final course of lectures after Jan 1, 1900, must show proof that he has attended four full courses of lectures at a recognized medical college, no two courses being in the same year

4 Each applicant, if he graduated after July 1, 1887, and prior to Jan 1, 1899, or completed his final course of lectures during that period, must show proof that he has attended three full courses of lectures at a recognized medical college, no two courses being in the same year

5 Applicants who graduated at a recognized medical college prior to July 1, 1887, must show proof of having attended two courses of lectures at a medical college

6 A fee of ten dollars must accompany the application This fee is not returned in case of failure

7 Examinations are always in charge of some member of the Board of Examiners

8 Each candidate is known by his number, which is arranged as follows Envelopes are numbered and each contains a blank bearing the corresponding number, on which the applicant writes his name and address This completed blank is returned by the applicant to the envelope and the envelope sealed by him

9 Each candidate places on his answer papers the number given him and also the year of his graduation No other marks of identification are allowed on the answer papers

10 The answer papers are collected and at once sent by express to the member of the board having charge of that subject Such member examines the answer papers and marks each candidate by placing the marking opposite the candidate's number These markings are sent to the secretary, who tabulates them and presents the same to the members of the board at a meeting which is held shortly after each examination When the markings are completed the envelopes containing the names are opened and these names are placed opposite the corresponding numbers

11 No dishonest methods are tolerated and any candidate who disregards this rule is debarred from further examination This rule includes giving or obtaining aid

12 Ten questions are given on each paper and all subjects for examination are covered by the ten question papers given

13 The time allowed for each examination paper shall not exceed two hours

14 No candidate is allowed to leave the room after the question papers have been distributed, until he has completed his answers and delivered them to the member in charge

15 The examination is in writing and in the English language If any candidate is unable to write in the English language, he will be allowed to write in his native language, provided he pays an extra fee of fifteen dollars, to cover the cost of translation

16 A general average of 75 per cent must be attained

17 Candidates who fail to receive a license at any examination must be re examined in all branches

18 Handwriting of candidates must be legible and orthography must not be such as will disgrace the medical profession

19 Candidates from all schools shall answer in common all questions submitted except the questions on materia medica which are adapted to the school of practice accepted by the candidate The answer papers on subjects peculiar to any one school of medicine are sent to the members of this board who are representatives of such school

20 Candidates shall submit to an examination in the following branches, to wit Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the board shall deem advisable

21 Applicant must furnish a recent unmounted photograph of himself attested to before a notary public, to accompany his application

Michigan May and June Reports—Dr B D Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Grand Rapids, Detroit and Ann Arbor, May 11 13, and June 11 13, 1907, respectively The number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75

At the examination held at Grand Rapids, May 11 13, the total number of candidates examined was 8, of whom 6 passed and 2 failed The following colleges were represented

PASSED

College.	Year Grad	Per Cent
Grand Rapids Med Coll	(1907)	77 3, 79 7, 82 1 82 4, 82 8
Illinois Medical College	(1907)	80 1

FAILED

	Year Grad	Per Cent
Grand Rapids Medical College	(1907)	68.7, 71

At the examination held at Detroit, May 11-13, the total number of candidates examined was 81, of whom 80 passed and 1 failed. The following colleges were represented

PASSED

College.	Year Grad	Per Cent
Detroit College of Medicine	(1903) (1905) (1906) (1907)	77.7 84 75.6 75, 75, 75, 75, 75.6, 75.8, 75.8, 76.3, 76.6, 76.8, 77.2, 77.5, 77.6, 78, 78.2, 78.7, 78.7, 78.8, 78.9, 79.5, 79.5, 79.7, 80.1, 80.4, 80.5, 80.6, 80.7, 80.8, 80.9, 81.1, 81.2, 81.2, 81.3, 81.3, 81.6, 81.6, 81.6, 81.8, 81.9, 82.1, 82.2, 82.3, 82.5, 82.6, 82.8, 83.6, 83.6, 83.9, 84.2, 84.3, 84.3, 84.7, 84.8, 85.6, 85.9, 86.6, 86.8, 87.9, 88.5, 88.8, 89.1, 90.4, 91
Detroit Homeopathic College	(1906) (1907)	75 76.6, 76.6, 80.1, 81.2, 81.4, 82.1, 83.7, 86.9
University of Michigan Homeo Dept	(1907)	81.8
University of Michigan	(1893)	75.3
Michigan College of Medicine and Surgery	(1892)	75.2
Miami Medical College	(1906)	84.2
Meharry Medical College	(1905)	75.5

FAILED

	Year Grad	Per Cent
Detroit College of Medicine	(1907)	68.1

At the examination held at Ann Arbor, June 11-13, the total number of candidates examined was 59, of whom 58 passed and 1 failed The following colleges were represented

PASSED

College	*Year Grad*	*Per Cent*
University of Michigan	(1906) (1907)	87.8 80.6, 82.9, 82.9, 82.9, 83.2, 83.2, 83.3, 83.3, 83.5, 84, 84.9, 85, 85, 85.5, 85.8, 86.4, 86.4, 86.5, 86.7, 86.8, 86.9, 87.2, 87.5, 87.5, 87.5, 87.5, 87.7, 87.9, 87.9, 88, 88, 88.1, 88.3, 88.6, 88.9, 89, 89, 89.4, 89.5, 89.6, 90.1, 90.1, 90.2, 90.6, 91.6, 92.7, 93.6
University of Michigan Homeopathic Dept	(1907)	75, 82.4, 83.4, 84, 86, 86, 87.7, 88.1, 88.7
Ohio Medical University	(1907)	91.3

FAILED

	Year Grad	Per Cent
American Medical College, St. Louis	(1903)	67.5

Ohio June Report—Dr George H Matson, secretary of the Ohio State Board of Medical Registration and Examination, reports the written examinations held at Cleveland, Columbus and Cincinnati, June 10-12, 1907 The number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass, 75 The total number of candidates examined was 164, of whom 156 passed and 8 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
Yale Medical School	(1905)	86
College of P and S Chicago	(1907)	88
Illinois Medical College	(1906)	75
Central Coll of P and S, Indianapolis*	(1903)	77
University of Maryland	(1907)	85
Johns Hopkins Medical School	(1905)	90
Harvard Medical School	(1902)	75
University of Michigan, Homeo Dept	(1907)	91
Cornell University	(1906)	85
College of P and S, New York	(1907)	82
Long Island College Hospital	(1885) (1907)	81 76
University of Buffalo	(1907)	87, 88
Bellevue Hospital Medical College	(1895)	79
New York Homeo Medical College	(1906)	76
Medical College of Ohio	(1907)	75, 78, 79, 80, 81, 82, 82, 83, 84, 84, 84, 85, 85, 86, 86, 86, 87, 87, 87, 88, 88, 89, 89, 89, 89, 91, 91, 91
Pulte Medical College	(1907)	76, 82, 85, 89, 91
Miami Medical College	(1906) (1907)	81, 89 78, 79, 79, 79, 80, 80, 80, 81, 82, 83, 84, 85, 86, 86, 86
Ohio Medical University	(1907)	75, 80, 83, 83, 83, 84, 84, 85, 86, 87, 87, 87, 89, 90, 90, 90, 90
Starling Medical College	(1906) (1907)	85 75, 77, 77, 77, 79, 80, 81, 82, 84, 84, 85, 85, 85, 86, 87, 87, 88, 89
Cleveland Homeo Medical College	(1907)	79, 81, 81, 89
Toledo Medical College	(1907)	84, 85, 85, 86, 87, 90, 92
Cleveland College of P and S	(1906) (1907)	77 80, 82, 82, 82, 84, 84, 85, 86, 87, 92
Eclectic Med Institute Cincinnati	(1884) (1896) (1907)	79 87 78, 85, 85, 85, 85, 86, 86, 86, 87, 88, 89, 89
Hahnemann Medical College Philadelphia	(1907)	85, 87
Jefferson Medical College	(1906)	79
Western Reserve Univ	(1907)	76, 79, 82, 83, 86, 87, 90, 90, 91, 91
Western Pennsylvania Medical College	(1905)	82
University of Pennsylvania	(1906) (1907)	81 80
Western University London Ont	(1907)	85
University of Naples, Italy	(1905)	78

FAILED

	Year Grad	Per Cent
Hering Medical College	(1894)	59
University of Maryland	(1906)	69
Cleveland College of P and S	(1907)	73
Cleveland Homeopathic Med College	(1907)	66
Eclectic Medical Institute Cincinnati	(1906)	71
Ohio Medical University	(1906)	67
Starling Medical College	(1906)	69
Meharry Medical College	(1906)	72

*In 1905 this school merged with Fort Wayne College of Medicine and Medical College of Indiana to form Indiana Medical College School of Medicine Purdue University

West Virginia July Report—Dr H A Barbee secretary of the State Board of Health West Virginia reports the written examination held at Charleston July 9 11, 1907 The number of subjects examined in was 9 total number of questions asked 120 percentage required to pass 80 The total number of candidates examined was 71 all of whom passed Two reciprocal licenses were granted at this examination The following colleges were represented

PASSED

College	Year Grad	Per Cent
George Washington University	(1907)	91
College of P and S, Chicago	(1907)	90
University of Louisville	(1904) (1905) (1907)	85 86 84, 84, 86, 86, 87, 87, 88, 88, 89, 91, 91
Kentucky School of Med	(1905) (1907)	80 83, 87, 91
Louisville Medical College	(1905) (1907)	82 84, 86
College of P and S Baltimore	(1907)	85, 86, 87, 87, 87, 88, 89, 89, 90, 91, 92, 92, 93, 93
University of Maryland	(1906) (1907)	93 89, 95
Johns Hopkins Medical School	(1905) (1907)	90 93
Baltimore Medical College	(1907)	88, 89, 90, 92, 92, 92
Maryland Medical College	(1906) (1907)	81, 90 85, 88
Harvard Medical School	(1907)	96
St Louis University	(1907)	86
Barnes Medical College	(1905)	85
University of Pennsylvania	(1906)	90
Medical College of Ohio	(1906)	93
Ohio Medical University	(1907)	89
Eclectic Med Institute Cincinnati	(1907)	85, 92
Jefferson Medical College	(1907)	86, 89, 93
University of the South	(1906)	84
Medical College of Virginia	(1906) (1907)	82 82, 85, 85, 88, 88
University Coll of Med. Richmond	(1907)	87, 88

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
College of P and S New York	(1899)	Virginia
Ohio Medical University	(1905)	Kentucky

Medicolegal

Bases for Opinions of Experts—Subjects for Opinions of Non Experts—New Question on Examination

The Supreme Court of Illinois says, in City of Chicago vs McNally, a personal injury case brought by the latter party, that it is no doubt, the rule that the opinions of expert witnesses in cases of this kind should be based on objective, and not subjective, symptoms, and should be the expression of the witness from what is manifest to him, rather than from the words of the person examined This court has, however, held a physician, when asked to give his opinion as to the cause of a patient's condition at a particular time, must necessarily, in forming his opinion, be to some extent guided by what the sick person may have told him in detailing his or her pains and sufferings But such declarations, being in favor of the party making them, are only competent when made a part of the *res gestæ (essential circumstances of the occurrence)* or when made to a physician during treatment or on an examination prior thereto, and without reference to the bringing of an action to recover damages for the injury complained of, unless the examination should be made at the instance of the defendant with a view to the trial

This court has also held that, where a previous habit of study is essential to the formation of an opinion sought to be put in evidence, only such persons are competent to express an opinion as have by experience, special learning, or training, gained a knowledge of the subject matter on which an opinion is to be given, superior to that of an ordinary person

Witnesses not experts are, however allowed to express opinions when the subject matter to which the testimony relates is such as in its nature can not be reproduced and described to the jury precisely as it appeared at the time Opinions may be given by non expert witnesses as to the state of health, hearing or eyesight of another, or the ability of another to work and walk, or use his arms or legs naturally, or whether such person is apparently suffering pain, or is unconscious, in possession of his or her mental faculties, intoxicated, excited, calm, etc A physician can ascertain from outward signs whether a person is nervous, feeble, irritable, suffering pain, or capable of *performing certain mental labor*

A physician having testified that the condition in which he found the plaintiff on a certain date must have been caused by some traumatism or injury, it was insisted that the question as to the cause of her condition was purely a question of fact for the jury, and that the answer of the witness invaded that province The court, however, does not think that this contention could be maintained

On cross examination counsel for the city attempted to ask the plaintiff whether she was willing to submit to a physical xamination as to her injuries Before the question had been ntirely put to the witness an objection was made, and coun el for the respective parties retired with the court to his hambers to consider the propriety of the question out of the aring of the jury The trial judge ruled that he would per it the record to show that the question was sought to be ked in the presence of the jury and the request was refused returning to the courtroom the plaintiff was asked whether was willing to submit to a physical examination Objec ns were sustained to the question, and this ruling was as ed as error The Supreme Court says that it has held in reat many cases that the plaintiff in an action of this kind not be required to submit to a physical examination as to or her injuries But the question whether or not one may sked, in the presence of the jury, as to his or her willing to submit to an examination, has never been before this t for decision It thinks the question, in the form it was asked, was properly refused

Liability for Blood Poisoning After Slight Injury

The Kansas City Court of Appeals says, in the personal injury case of Rosier vs Metropolitan Street Railway Company, that the plaintiff's injury, sustained while getting on a street car, was apparently a slight one on the shin bone, but it finally resulted in blood poisoning, and for a while his life was threatened The defendant contended that, in the event it was to be held liable, it should be for the original injury, which appeared to be slight, and ought not to be for the plaintiff's after condition, as it was brought on by his own carelessness in taking care of it The specific claim of negligence was that the plaintiff treated his wound at the beginning for several days with ammonia, by keeping it bandaged with a dirty cloth, which was the cause for blood poisoning The evidence to sustain this contention was slight It was true the plaintiff treated his wound with ammonia, but he said that he bandaged it with a clean linen handkerchief Shortly afterward he used an ointment prescribed by a physician, and continued to use his handkerchief as a bandage On cross examination he stated that he put the ointment on twice a day He was then asked "You used the same cloth? A Yes, used the same cloth Q And washed it each time? A No, sir, I kept turning it Q Kept on using it? A I used it to day and to morrow, maybe, then turned it and washed it again Q You used the same cloth quite a while, did you? A Yes Q How long? A Well, now, I don't know, I couldn't tell whether I changed—it seems to me that I got a cloth and put around it" A physician testified that the treatment described would likely produce blood poisoning This instruction of the jury was then asked, and refused "If the plaintiff used medicine or bandages on the injury complained of, and such treatment caused or produced blood poisoning, then defendant is not liable for any injuries caused by such blood poisoning, and you will not consider the same in making up your verdict." The court thinks that the instruction was objectionable because it did not state the law in the case It says that the plaintiff would not have been precluded from recovering on the ground that the manner in which he treated his injury produced blood poisoning, if he was not guilty of negligence in doing so

Admissible Evidence of Paralysis.

The Supreme Court of Illinois says, in Chicago City Railway Company vs Shreve, a personal injury case brought by the latter party, that the plaintiff claimed, and sought to show on the trial, that she was suffering from paralysis as a result of an injury which she sustained in a collision between a street car on which she was a passenger and a truck wagon, and she called a number of medical experts as witnesses on her behalf, who testified that in their opinion such was the fact. From their testimony it appeared that they had talked with her, and made experiments, by sticking pins into her flesh and manipulating her limbs, to determine whether or not she was feigning paralysis It was urged that the trial court erred in permitting such facts to go to the jury, and in permitting such witnesses to state to the jury their opinions as to the plaintiff's condition, based on subjective, rather than objective, conditions But the trial court repeatedly informed the witnesses that they were to base their opinions only on what they had seen, and not on any statements made to them by the plaintiff, or on any physical manifestations of the plaintiff within her control, and in order to more fully exclude from the consideration of the jury all such statements, experiments and manifestations, the trial court gave to the jury, at the instance of the defendant, an instruction which excluded specifically all evidence from the consideration of the jury which could by any possibility be regarded an infringement of the rule against the consideration by them of any subjective condition in the plaintiff brought out during the examination of the expert witnesses Under these circumstances the Supreme Court does not think that the evidence of the medical witnesses, or the rulings of the trial court in admitting the same, was subject to the criticism made thereon

May Testify to Mental Condition of Patients

The Supreme Judicial Court of Maine holds, in the case of Ireland vs White, that skilful and reputable physicians, although not experts on the subject, may testify to the mental condition of their patients when they have adequate opportunity of observing and judging of their mental qualities Such conditions testified to is a fact observed, which differs from a conclusion as to legal sufficiency or insufficiency of mental capacity to be deduced in each case from facts proved, under correct rules of law

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

New York Medical Journal

August 17

1 *Hypernephroma. I W Blackburn Washington D C
2 *A Valuable Sign in Exophthalmic Goiter L N Boston Philadelphia
3 Physical Reconstruction of School Children by Means of Fresh Air L R Williams New York
4 Police Methods for Sanitary Control of Prostitution I Bierhoff, New York.
5 Ligation of the External Carotid in Rhinology and Pharyngology C Jackson Pittsburg Pa
6 *Malarial Fever as Seen in the Jungle C S Braddock, Jr, Haddonfield N J
7 Profound Mental Disturbance Due to Pelvic Disease Cured by Operation A L Fuller Winters Texas
8 Eczema in Second Year of Life C A Kinch New York

1 **Hypernephroma.**—Blackburn gives a well illustrated histologic study of three cases of hypernephroma of the kidney and one of papilliferous adenoma In general, the histological evidences of hypernephroma are 1 The resemblance of the tumor cells to those of the adrenal gland and the "adrenal rests" so frequently present in the kidney and other structures This is seen in the shape of the cells, their nuclei, and in the degenerative changes in the tumor elements 2 The absence of transition structure between the tumor and the renal tissue, present in renal adenomata. 3 The tendency of the metastasis to extend by way of the blood vessels rather than the lymphatics 4 The presence of a thinly walled capillary network among the tumor cells, in this respect resembling the adrenal gland. 5 The presence of large, clear, more or less columnar cells, ranged in irregular rows along the alveolar walls, and in case of the capillary network in direct contact with the endothelial wall 6 In some forms of hypernephroma an alveolar structure with open gland like acini, sometimes containing free cells and blood, with a stroma consisting of delicate connective tissue and capillaries lined with low columnar cells

2 **New Sign in Exophthalmic Goiter**—Boston describes the following sign, found in each of fifteen cases of exophthalmic goiter, after exophthalmos had become conspicuous The patient is seated with the occiput braced firmly against the back of the chair or wall, and rotates the eyeball upward to the finger of the operator, placed above the head. The patient is directed to follow the operator's hand with the eye, as it is carried from above to below a level with the chin, keeping it about three feet distant from the eyes In the course of the descent the [illegible] mena occur The superior lid

follows downward with the pupil for a short distance, where it rests for an instant, then displays a slight spasm, with apparent slipping back, after which it continues to follow the pupil for an indefinite distance

6 **Malarial Fever as Seen in the Jungle**—Braddock gives some notes of his experience as chief medical inspector to the Siamese government The writer points out that pernicious malarial fever will strike down, in spite of mosquito curtains, every man who lives even for a few days in the deep jungle without clearing it and letting the sun in Further, that the *drinking of unboiled water in the jungle, no matter how* clear and sparkling the mountain stream may be, will be followed by fever The natives appreciate this fact, and never drink a bit from the streams, but always dig wells alongside and let the water filter through

Boston Medical and Surgical Journal

August 15

9 *The Psychic Factor in Disease G C Smith Boston
10 *Blood Pressure as a Guide in Treatment of Hemoptysis E O Otis Boston
11 *Soluble Bobbin for Intestinal Anastomosis J H Cunningham Jr Boston and H W Baker Rochester, Minn
12 *Two Cases of Vicarious Menstruation R C Larrabee, Boston
1 Senile Trepidant Abasia E W Taylor Boston

9 *The Psychic Factor in Gastric Disease*—Smith analyzes the underlying factor in the various forms of the psychic epidemic, amounting almost to a monomania in Boston, now so *generally prevalent, and points out its relation to autosuggestion* For the purposes of study, he has taken 100 neurasthenic cases at random and divides them into two great classes 1 Those individuals born with an inherited predisposition—children of tuberculous, alcoholic, syphilitic, and nervous parents especially—are predisposed to the affection, as the digestion of such patients is readily impaired, and their delicate nervous protoplasm suffers still more from faulty metabolism Such patients are very susceptible to indigestion, mental or physical shock, fright and emotional disturbances, and from them number furnish us with the best types of traumatic neurasthenia A large number of nervous dyspeptics belong to this class, and by carefully watching their numerous *bodily sensations, the latter soon become pathologic, and* the habit of autosuggestion is established and ere long such patients may become hypochondriacs 2 Those whose heritage is good, but who acquired the affection by bad environment, improper training in youth at home and in school, persons who worry for fear of not making both ends meet, and those who have habit spasm Low metabolism was found to be the stigma in the majority of hereditary cases, and in some of the acquired cases He describes in detail the method of procedure which is essentially the same as that set forth by Oppenheim in the 'Psychotherapeutische Briefe," published in 1906, but Smith does not attempt to carry it out by correspondence, finding office treatment serves the purpose He considers the nature of *fatigue*, physical, mental or emotional, as affecting the neurotic, and its erection into an autosuggestive habit, and then discusses in some detail the special application of the method to symptoms, headache, autotoxemia and faulty metabolism He then sums up the requirements of the physician to practice psychotherapy as follows 1, A strong personality, 2, thorough knowledge of the patient, 3 considerable knowledge of psychology, 4, broad scientific training Prophylaxis must always be kept in mind, as such a large percentage of neurotics trace the origin of their affection to their childhood His experience confirms Barker's view that patients past middle life do not yield so well as those between 20 and 40 being, as they are, more opinionated and more commonly subjects *of some organic* disease He adds that, 'the chief value of the psychic factor is in the care of the organic diseases as their functional affections are fast disappearing under the light of better diagnoses" He emphasizes his belief however, that in recent years the eminent rôle played by psychotherapy is wholly unjustifiable and misleading He deprecates the incorporation of the science of medicine with theology for while the fundamental principles of right and wrong may be identical the deductive processes by which the sciences are built up are essentially different "Let thorough laboratory research coupled with careful clinical study, not only of disease, but of humanity, continue in the future, as in the past, to actuate our profession"

10 **Blood Pressure in Hemoptysis**—In regard to the indications for drugs in hemoptysis, Otis reports the results of 18 cases of treatment by the nitrites or ergot respectively, when the blood tension was taken as soon as possible after the hemorrhage began An examination of the blood pressure in 320 tuberculous patients showed an average of 124 mm Hg The average in men was 128, in women, 115, the highest male average, 140, the lowest, 100, the highest female average, 120, *the lowest*, 98 The average blood pressure in tuberculous persons was, therefore considered to be 126 In the 18 cases of hemoptysis the majority showed a blood pressure markedly *below the average* Routine *treatment* was of course, applied at the beginning, but on recurrence of persistence of bleeding, either ergot or the nitrite in the form of sodium nitrite or nitroglycerin, was tried, according to the indications of the blood pressure If either failed in any case the other was administered whatever the blood pressure might be In some cases both were effective, in others ineffective The author suggests that the blood pressure should be taken as a routine measure in tuberculosis sanatoria A fall in the blood tension is suggestive of impending hemorrhage, which may perhaps be warded off by ergot The author's scheme of routine treatment when active treatment seems indicated is as follows The first essential is a knowledge of the blood pressure of the *patient from previous observations, on the* occurrence of the hemorrhage, ice, morphin and atropin are administered subcutaneously, and, depending on the amount and rapidity of the hemorrhage, the inhalation of amyl nitrite A laxative dose of magnesium sulphate is given and, if the bleeding persists or is recurrent, sodium nitrite is given, or nitroglycerin if the blood pressure is high for the individual, or if low, ergotin is injected subcutaneously

11 **Soluble Bobbin**—Cunningham and Baker describe a soluble bobbin for use in end to end intestinal anastomosis, made from macaroni of a large commercial size, cut into cylinders, three inches long by three quarters of an inch in diameter Bobbins of special design were also made They were sterilized by dry heat Animal experiments indicate their usefulness in facilitating intestinal suturing, holding the sutured ends in position until firmly adherent, and serving as a conduit *of the intestinal contents At a period of time* not under 12 hours or longer than 35, the material is digested and absorbed

12 **Vicarious Menstruation**—Larrabee divides extragenital hemorrhages recurring at the menstrual periods into three groups First, replacement of the uterine flow by bleeding from some other site without general hemorrhagic tendency, the constitutional effect in this group is negligible Second, cessation of normal flow, with general hemorrhagic tendency, and a picture resembling purpura hemorrhagica, the resulting anemia may prove fatal Larrabee's first case typifies this form Third, cases closely allied to, if not identical with hemophilia A second recorded case exemplifies this condition Such cases are spoken of as vicarious menstruation, merely because *along with the normal menstrual flow there may be* an exacerbation or a tendency to bleed, present at other times as well Uterine menstruation is absent in some cases, in others as in that quoted, it is excessive

Medical Record, New York

August 17

14 *Treatment of Surgical Tuberculosis by Hyperemia V Schmieden Bonn Germany
15 *Ophthalmologic Phase of Diseases of the Accessory Sinuses of the Nose W C Posey Philadelphia
16 Relations of Eye to Nose with Certain General Conditions C W Cutler New York
17 *Evolution of Life from the Lifeless J Wright New York
18 *Manifestations of Paranoia A W Ferris New York
19 *Acute Intussusception J H Bradshaw Orange N J
20 Methods of Teaching Medicine O L Mulot, Brooklyn

14 **Bier's Hyperemia in Surgical Tuberculosis**—Von Schmieden describes Bier's treatment as carried out by him The degree of hyperemia must be considered "It is absolutely wrong to think that if a little is good more is better" The band should be broad (6 cm), soft, applied slowly and evenly around the extremity, proximally, but not close, to the tuberculous joint The bandages must not cause pain, either at the

place of application or in the diseased joint, the limb must remain warm and the pulse entirely unchanged The bandage is applied once or twice daily, for from one to two hours In the case of a tender skin the location of the bandage must be changed No other bandages must remain during the treatment and discharging fistulas must be covered up The joint should not be kept in fixation A healed tuberculous joint should always be movable The end in view is an anatomic healing with maintenance of mobility The signs of good result are abeyance of pain, disappearance of inflammation and contractures, subsidence of swelling, sclerotization of fungous masses which, with further treatment, are absorbed Cold abscesses may develop, and should be evacuated and treated with cupping glasses Considerable time is required, nine months or even longer Those who wish quicker results must submit to amputation The treatment is so simple that it can be applied by the patient himself It is unfortunately inapplicable to the hip joint, and in the knee joint additional measures are necessary The best results occur with the ankle, elbow and wrist The exudative form (hydrops) is never treated by hyperemia Cupping glasses are frequently used in combination with the elastic band

15 **Accessory Sinuses of the Nose and Eye Symptoms**—Posey considers contiguity of tissue adequate to account for ocular troubles consequent on nasal conditions Mere congestion of a sinus may result in eye symptoms The optic nerve is also affected, through contiguous tissue, in all degrees between simple edema and active retrobulbar inflammation Edema of the lids is very frequently encountered Pre lachrymal abscesses, i e, the swellings that form at times above the internal palpebral ligament, externally to the lachrymal sac, may be due to sinusitis Orbital cellulitis of marked intensity may be occasioned by sinusitis resulting from necrosis of ethmoidal sinus walls or suppuration of frontal cells He also describes an interesting unusual condition, apparently depending on nasal causes, viz, that of a man with a blind spot which appeared in the center of the side of the left eye, in a high wind and freezing weather There was no sinus trouble or pus center in the nose, but the erectile tissue of the turbinates was exceedingly sensitive, swelling even under routine examination

17 **Evolution of Life**—Wright criticises Bastian's recent book on "Archebiosis" While modern science has little to say to plausible theories or *a priori* arguments, some of Bastian's experiments seem without flaw in their plan As the demonstration of one set of conditions under which spontaneous generation may occur is all that is necessary in order to prove the probability of its occurrence in others, the only way to refute these experiments lies in their repetition, with a demonstration of errors of technic

18 **Paranoia**—Ferris lays stress among the manifestations of this disease on systematization of the delusions A fixed idea becomes a central fact, unchangeable in character The patient firmly believes in his illusions, which possess an apparently logical, though unreal, character Reactions are certain and intense, false interpretations frequent, and an intellect comparatively unimpaired, though dominated by a delusion, may be preserved for years Expansive delusions and a sense of self importance are common, hallucinations, especially of hearing, are present It must be remembered that a paranoiac may possess a perfect memory and unimpaired intellect for years, save in regard to the absurdity of his fixed idea, may seem plausible and convincing to the layman, lucid on everything unconnected with his delusion, and capable of carrying on business and conducting himself in social life like sane persons, except in matters in which his delusion is involved Even here he sometimes realizes that his delusions will be disbelieved and is able to refrain from giving expression to them

19 **Intussusception.**—Bradshaw, in considering operations in children, emphasizes the following points 1 The great importance of supplying heat to an infant under one year of age while undergoing so serious an operation as a laparotomy, should be borne in mind. 2 The infant should be well supplied with hot water bottles all the time while on the operating table 3 It is well, if the patient is a nursling, to let it take the warm mother's milk as soon as it has come out from the anesthetic 4 Regular nursing is the best heart stimulant it can receive 5 When, as in the second case reported, there is profound shock with sepsis, the plan suggested by Murphy for the treatment of general septic peritonitis, of giving hot saline by slow continuous rectal irrigation is distinctly life saving Its effect in washing out the toxins and thereby raising the opsonic index and of increasing the amount of urine secreted, of relieving thirst and changing the dry tongue and the whole septic face of the patient is little short of magical

The Lancet-Clinic, Cincinnati

August 17

21 Treatment of Syphilis J C Paine Peoria Ill
22 *Primary Nasal Tuberculosis W Thrasher Cincinnati

22 **Primary Nasal Tuberculosis**—Thrasher reports a case of the hyperplastic variety of apparently primary nasal tuberculosis in a girl aged 15 The nares were completely occluded with tumors of cauliflower appearance, pale gray color, with an abundance of mucopurulent secretion, and springing from the turbinals of both sides and from the bony section The bulk of the pharynx was filled with similar growths The microscopic structure consisted of small *round* cells, scattered among which were numerous giant cells surrounded by epithelial cells, areas of coagulation necrosis and cheesy degeneration were present Removal and cauterization with lactic and trichloracetic acid were practiced and constitutional treatment was given A recurrence four years later was treated in the right manner Seven years later the patient was in excellent health The prognosis in primary nasal tuberculosis is generally good

Annals of Ophthalmology, St Louis

April

23 *Rarer Ocular Lesions Associated with Gout or General Lithemia C S Bull New York
24 *Papilloma of the Caruncle C Loeb, St Louis
25 *The Real Cause of Myopia C Schulin, Billings Mont
26 Case of Alexia in Boy of Fifteen M V Ball Warren Pa
27 Case of Amaurotic Family Idiocy M Buchanan Philadelphia.
28 Two Fatal Cases of Orbital Cellulitis H F Hansell, Philadelphia
29 Proliferative Uveitis W Zentmayer, Philadelphia
30 Retinitis Proliferating in Character in Detached Retina of Traumatic Origin W T Shoemaker and C M Hosmer, Philadelphia
31 Ophthalmic Picture of Intraocular Tumors. J Fejer Budapest, Hungary

23 **Eye Lesions and General Lithemia**—Bull considers that it is a mistake to regard gout as directly responsible for the vascular lesions in the eye, in gouty patients The true view he considers to be that the nitrogenous products of metabolism are the cause of both the arterial degeneration and the gout He deals with conjunctivitis, edema of the eyelids, chorioiditis, retinitis, optic neuritis, and affections of the ocular muscles as manifestations of the lithemic condition, which are often forerunners of an acute explosive inflammatory attack elsewhere in the body, after which the hitherto obstinate eye lesion promptly gets well

24 **Papilloma of Caruncle**—Loeb records a case with microscopic examination, because of the rarity of the condition So far as he has been able to discover, the literature shows only 12 cases reported by Roselli, Veasey, Posey and Shumway, Hirschberg and Birnbacher, Weeks, Parasotti, Testellin, Terrien, Secondi Kubli and Franke A probable case is also reported by Desmarres as *encanthis fongueux*

25 **Myopia**—Schulin points out that in all the theories of the origin of myopia that have been advanced only the mechanical side of the process has been dealt with, and the fact has been ignored that the general health of the child may have a share in its causation As a consequence of the examination of over 5,000 individuals during 15 years, he arrives at the conclusion that myopia originates in the general health, being dependent on an autointoxication produced by unhygienic conditions in childhood.

Ohio State Medical Journal, Columbus

August 15

32 *Recent Advances in Cardiac Pathology and Diagnosis G W McCaskey Fort Wayne Ind
33 *The Pulse in Diagnosis and Therapeutics J B Ballinger Bradford

34 Charlatanry in Treatment of Female Disease E Holbrook, Lebanon
35 The Future of Pediatric Science W W Pennell Mount Vernon
36 Conservative Treatment of Tuberculous Arthritis in Children W S Stern, Cleveland
37 Acute Endometritis W K Rodgers, Columbus
38 Study in Charlatanry A S Barnes Columbus
39 *Difficulties Met with in Demonstrating Spirochæte Pallida B R Leroy, Athens

32 **Cardiac Pathology and the Pulse in Diagnosis**—McCaskey in his paper lays great stress on the necessity, in all cases of marked weakness and irregularity of the heart, of a careful study, by graphic methods, of the synchronicity of the different cardiac events, and on a study of the blood pressures, both diastolic and systolic, as a routine procedure in all cases of cardio-vascular disease

33 **Pulse in Diagnosis and Therapeutics**—Ballinger emphasizes the importance of the *tactus eruditus*, and urges that we should train our sense of touch to measure the pressure within the artery, and to estimate the thickness and resiliency of its walls

39 **Spirochæta Pallida**—Leroy says that by the following method the *Spirochæta pallida* will be found in great numbers, from five to eight in a field, as a constant factor in primary syphilis

1 All instruments and slides must be scrupulously clean
2 Do not use mercurial washes on the initial sore as a means of preparation, but rather wash the sore with sterile water
3 Scarify gently with a knife the surface of the chancre or mucous patch, permitting the blood to 'well up" in a good sized drop Let stand for some minutes, until the serum is clear, then with loop place serum on slide, using care not to take up many red blood cells Spread even Dry in air protected from dust
4 Fix in pure methyl alcohol for twenty minutes
5 Stain with Giesma's (Wellcome's tabloid) and at once add an equal amount of distilled water and let stand twenty minutes
6 Flood stain off with distilled water, dry in air and examine in oil in a good light.

Even now, on examination one may fail to find the organism, for this minute germ pops' into and out of focus with remarkable quickness, and much depends on careful adjustment. Many microscopes have the 'fine' adjustment somewhat too coarse for the ordinary worker, hence the many failures

Bulletin of Johns Hopkins Hospital, Baltimore

June-July, 1907

40 Organization of the Laboratories in the Medical Clinic of Johns Hopkins Hospital L F Barker Baltimore
41 Occurrence of Howell's Nuclear Particles in Experimental Anemia of the Rabbit and in Human Blood R S Morris, Baltimore
42 Blood Formation in the Liver and Spleen in Experimental Anemia R S Morris
43 Measurement of the Coagulation Time of Blood and Its Application F Hinman and F J Sladen
44 Wright's Method of Measuring Alkalinity of the Blood S Strouse Baltimore
45 *Treatment of Gonorrheal Arthritis by Vaccines R I Cole and J C Meakins, Baltimore
46 *Tuberculo Opsonic Index and Treatment by Tuberculin P C Jeans and A W Sellards
47 *Study on Opsonins W L Moss Baltimore
48 Opsonins in Typhoid Immunity H Klien Leipzig
49 *Studies on Specificity of Opsonins in Normal and Immune Serum F F Russell U S Army
50 New Method of Fixation of Complement in Diagnosis of Meningococcus and Gonococcus Infections J C Meakins Baltimore
51 Diversion of Complement in Hemolysis J C Meakins, Baltimore
52 Production of an Agglutinating Serum for Blood Platelets R I Cole
53 Blood Pressure and Pulse Form A D Hirschfelder, Baltimore
54 Variations in Form of Venous Pulse A D Hirschfelder Baltimore
55 Rapid Formation of Endocarditic Vegetations A D Hirschfelder Baltimore
56 Calcium Magnesium Phosphorus and Nitrogen Metabolism and Organic Acidity of the Urine in Case of So called Phosphatic Diabetes L F Barker and C Voegtlin Baltimore
57 Study of Metabolism in So called Arthritis Deformans J H King Baltimore
58 Method of Preparing Romanowsky Stain N M Harris Chicago
59 Operative Treatment of Subdeltoid Bursitis W S Baer Baltimore

August

60 Report of First Two Years Work in Phipps Dispensary for Tuberculosis of Johns Hopkins Hospital L Hamman, Baltimore
61 *The Home Factor in Tuberculosis H H Hazen Baltimore
62 Early Diagnosis of Pulmonary Tuberculosis L Hamman and S Wolman Baltimore
63 Crusade Against Tuberculosis L F Flick Baltimore
64 The Tuberculosis Situation in Maryland H B Jacobs Baltimore
65 Intestinal Obstruction J C Bloodgood, Baltimore
66 The Purple Island by Phenias Fletcher A G Pohlman, Indianapolis Ind

45 **Vaccine Treatment of Gonorrheal Arthritis.**—Cole and Meakins consider gonorrheal arthritis a most suitable condition for treatment by vaccines, if Wright's opsonic theory and method are correct, because phagocytic or opsonic immunity may play a prominent part in the case of those infections due to the group of cocci to which the gonococcus belongs, because the present treatment of the condition is not very satisfactory, and because the arthritis is a local metastatic infection of prolonged cause situated in a position in which the blood supply is not very abundant, and in which, therefore, stimulation of the general mechanism of immunity is probably not very active They describe the formation of the vaccine and report fifteen cases in which it was used While they realize that many patients with gonorrheal arthritis recover completely under other forms of treatment, they are under the impression, on the whole, that the vaccine treatment has been of distinct value.

46 **Tuberculo-Opsonic Index**—Jeans and Sellards as the result of a study of nine cases (reported), consider a continuation the method of treatment justified In regard to diagnosis, they have employed the opsonic method in a considerable number of cases without obtaining a satisfactory result and further, the diagnostic method described by Wright, of heating the serum for the detection of immune opsonins, has also not proved of value in five cases in which they have tried it

47 **Opsonins.**—Moss summarizes his conclusions as follows 1 No high degree of opsonic immunity such as is possible in antitoxic and bactericidal immunity, can be produced in rabbits by ordinary inoculation procedures with *Staphylococcus aureus* 2 None of the present methods of estimating the opsonic content of the blood seems sufficiently accurate to be of practical value It seems important that further effort should be expended in finding a reliable technic for clinical purposes rather than in continuing to pile up statistics which are so inaccurate as to be misleading

49 **Specificity of Opsonins**—Russell, from experiments which have been repeated a number of times, draws the following conclusions 1 Following injections of bacterial vaccines, the increase of opsonins is probably due to the formation of immune opsonins which react specifically 2 In saturation experiments with normal sera we are dealing with normal or common opsonins, and these are not specific, since they can be removed by saturation with any one of a considerable number of bodies 3 In saturation experiments with immune sera we have both the immune and the common opsonin present, the former is quite specific, while the latter is not 4 *B pyocyaneus* is susceptible to spontaneous phagocytosis

61 **Home Factor in Tuberculosis**—Hazen reports results of an examination instituted by the Phipps Dispensary, Baltimore, into the home life of tuberculosis patients Eighty-three families were studied, with a total of 534 individuals Results show that in 63 per cent of their cases there was no tuberculosis in the immediate ancestors, 43 per cent of those exposed to marital infection became infected, while only 38 per cent of those exposed to parental infection developed the disease Only three individuals of tuberculous stock developed lung trouble when not in association with their families There were eleven well marked instances of house infection In view of these facts Hazen can not help believing that infection acquired by long continued and intimate association plays the only rôle in the transmission of pulmonary tuberculosis

Cleveland Medical Journal

August

67 Summary of One Thousand Cases of Appendicitis with Observations on Diagnosis G Crile Cleveland
68 *Case of Vaginal Cesarean Section J S Clark Cleveland
69 Surgical Lesions of the Central Nervous System C H Frazier Philadelphia
70 Criminal Abortion F H Grube Xenia Ohio

68 **Vaginal Cesarean Section**—Clark reports a case of vaginal Cesarean section in the case of a primipara aged 26, with convulsions, and urine nearly solid with albumin at the seventh month He summarizes the indications for vaginal Cesarean section as follows 1. Certain cases of eclampsia when the cervix is not obliterated and is very rigid and unyielding 2 Cases of heart disease under the same condition when rapid delivery is demanded 3 All cases of separation of a nor-

mally implanted placenta 4 It may be rarely indicated in placenta prævia when the hemorrhage is profuse and the cervix is not obliterated and is very rigid, a condition not frequent in placenta prævia 5 In the above conditions it is preferable to abdominal section because while it is nearly as quickly performed it does not cause so much shock, is not so objectionable to friends of the patient and is not so likely to result in rupture of the uterus in subsequent pregnancies

Journal of the South Carolina Medical Association, Greenville

July

71 Responsibility of the Physician in Carcinoma of the Cervix and of the Breast L Guerry Columbia S C
72 Cancer of the Uterus—Our Responsibility to Woman A B Knowlton Columbia S C
73 *Modification of Gilliam s Operation for Backward Displacement of the Uterus L Peters Columbia S C
74 Suprapubic Lithotomy or Cystotomy D M Crosson Leesville S C.

73 **Modification of Gilliam's Operation**—Peters first gives the procedure of Gilliam's operation for backward displacements of the uterus as described in The Journal A M A, June 15, 1901, page 1692 He points out that the round ligaments are simply pulled over toward the middle line and drawn with their overlying peritoneum through a perforating wound in the fascia, near the incision where they are secured by sutures, thus producing a pocket of peritoneum in which there is a chance that a knuckle of gut may become fixed and strangulated The chances of hernia are also increased He modifies Gilliam s operation as follows and reports satisfactory results in four cases After the abdominal incision has been made the round ligament of one side is seized with tenaculum forceps one and one half inches from the uterus and drawn up into the incision The peritoneum over the round ligament is incised for from 0 5 to 1 cm at the point where it is grasped by the tenaculum The round ligament is then drawn into the abdominal cavity through this little incision in the peritoneum and a stout silk thread looped about the round ligament and clamped, but not tied The other round ligament is similarly treated. Then one half inch from the incision a curved artery forceps is made to pierce the aponeuroses and fasciæ obliquely outward, as described by Gilliam, but instead of perforating the peritoneum and thus entering the abdominal cavity an inch to an inch and a half from the incision the point of the forceps is forced onward between the peritoneum and fascia until it is made to emerge into the abdominal cavity through the little opening in the peritoneum over the round ligament at the point where the silk was lopped around it The blades of the forceps are then separated and made to grasp both ends of silk thread which is looped over the round ligament, the forceps is withdrawn, bringing with it the thread, and traction on the thread brings with it a loop of round ligament without peritoneal covering The loops of ligament are then secured and the operation is completed according to Gilliam's method

Journal of Cutaneous Diseases, New York.

August

75 *Two Cases of Raynaud s Disease with Ocular Symptoms G H Fox, New York.
76 Results in Experimental Inoculation of Syphilis C M Williams New York.
77 Chancre of the Cheek Following a Bite J Kingsbury, New York

75 **Raynaud's Disease.**—Fox reports two cases of Raynaud's disease in both of which there was a sudden paroxysmal impairment of vision Another point of interest in the first case was the involvement of so many lesions including the fingers toes, nose, ears, cheeks, chin, tip of tongue and nipples The second case was also interesting on account of its complication with scleroderma, an association of diseases which has been made the subject of an inaugural thesis by Favier

The Physician and Surgeon, Detroit

March

78 Infant Feeding. J L Morse Boston
79 Effect of Roentgen Rays on Blood Forming Organs A S Warthin Ann Arbor

Virginia Medical Semi-Monthly, Richmond.

July 12

80 *Treatment of Extrauterine Pregnancy A P Heineck Chicago
81 *Successful Treatment of Gallstones without Surgery C S Webb Bowling Green Va
82 Treatment of Coxitis P A McIlhenny New Orleans La.
83 Is Eyestrain the General Prevailing Cause of Migraine? S Harnsberger Catlett Va
84 Principles of Surgery (Continued) S McGuire Richmond

July 26

85 *Pure Drugs H W Wiley Washington D C
86 *Uterine Decidua as a Diagnostic Sign in Extrauterine Pregnancy A P Condon Omaha Neb
87 *Amenorrhea R R Smith Grand Rapids Mich
88 *Plea for Operative Cure of Hernia C P LaRoque Richmond Va
89 Diagnosis of Cardiac Disease F Ragan and S L White Ruston Iowa
90 Principles of Surgery (Continued) S McGuire, Richmond

80—Practically the same article appeared *in extenso* in *Surgery, Gynecology and Obstetrics*, February, 1907

81—The substance of this article was abstracted in The Journal, Nov 17, 1906 page 1675, from Webb's original paper as presented to the Medical Society of Virginia, Sept 9 1906

85—This article also appeared in the *Monthly Cyclopedia of Practical Medicine*, June, 1907

86—Abstracted in The Journal, June 8, 1907, page 1982

87—Abstracted in The Journal, July 13, 1907, page 180

88 **The Cure of Hernia**—LaRoque makes an earnest appeal to the general practitioner to take more interest in his hernia cases, with a view to having the patients submit to operation for radical cure He lays stress on the decreased usefulness and earning capacity of the hernia subject and enumerates the dangers and inconveniences of the truss palliative method, and of injections, etc into the sac, and then shows by statistics, especially those of Coley and DeGarmo, that under modern operative methods the mortality is practically almost *nil* and the radical cure positive

The Laryngoscope, St Louis.

June

91 The Mouth of the Esophagus G Killian Freiburg Germany
92 Loss of Voice in Singers W J Henderson New York City
93 Advantages of Intranasal Route over Radical Operation in Treatment of Chronic Symptoms in Antrum of Highmore R C Myles New York
94 *Tuberculosis of Accessory Sinuses of the Nose J W Gleitsmann New York.
95 Acoustics of the Mouth and Relation of the Individual s Voice to Hearing D B Kyle Philadelphia
96 Subperiosteal Squamo-mastoid Abscess S Oppenheimer, New York
97 Four Mastoid Cases N H Pierce Chicago
98 Case of Foreign Body in the Larynx for Two Years S Rosenheim Baltimore
99 Case Reports—Epithelioma of Larynx Sarcoma of Pharynx C. F Theisen Albany N Y
100 Case of Otosclerosis G E Shambaugh Chicago
101 Formidin in Affections of the Ear Nose and Throat O J Stein Chicago
102 Action of New Iodin Preparation in Nose and Throat Work F Menge Chicago
103 Instrumental Aids to Bronchoscopy and Esophagoscopy C Jackson Pittsburg Pa

94—Abstracted in The Journal, Aug 3 1907, page 419

Journal of the Missouri State Medical Association, St. Louis.

July

104 Tuberculosis a Communicable Disease J M Allen
105 Sanitation and Tuberculosis C Homan St Louis
106 Early Diagnosis of Tuberculosis of the Lungs L M Warfield St Louis
107 Duty of the General Practitioner in Tuberculosis W S Allee Olean Mo
108 Consumption and Civilization J O Cross Kansas City Mo
109 Need of Local Organization in Fight Against Tuberculosis F Devilbiss Eugene Mo
110 Civic Responsibilities W Porter St. Louis
111 Local Anesthesia. R D Haire Clinton, Mo
112 Acute Bronchitis During the Nursing Period J J Rice Kearney Mo

Detroit Medical Journal

July

113 Diagnosis and Treatment of Suppurative Kidney Lesions with Special Reference to Pyelonephritis F W Robbins Detroit.
114 Office Treatment of the Commoner Rectal Diseases I J Hirschman Detroit

Chicago Medical Recorder

July

115 Metabolism as Affected by Disorders of the Stomach and Intestines. R W Webster Chicago
116 Intravenous Therapy W F Bernart Chicago
117 Epilepsy G C Shockey Chicago
118 Fractures of the Sternum and Ribs E Friend, Chicago
119 Treatment of Acute Rheumatic Fever S R Pietrowicz, Chicago

Journal of Nervous and Mental Diseases New York.

July

120 Unilateral Paralysis Agitans Occurring After Hemiplegia J Sailer Philadelphia

121 Study of Reflexes of the Lower Extremities in 60 Cases of Paresis A Gordon Philadelphia
122 Sensory and Motor Disturbances in Parts Above the Distribution Involved by Definite Organic Lesions of the Spinal Cord T H Weisenburg Philadelphia
123 Korsakoff's Psychosis Superimposed on Melancholia J W Stevens Amityville, L I

Southern California Practitioner, Los Angeles

July

124 Hypertrophic Pyloric Stenosis in Infancy W A Edwards Los Angeles
125 Pathology of Ptomain Poisoning S P Black Los Angeles
126 Three Cases of Fatal Ptomain Poisoning C Sheppard Ontario Cal
127 Fracture of the Forearm F M Bruner San Diego Cal
128 The Vision Splendid N P Conrey Los Angeles
129 Medicine Ancient and Modern E F Major, Redlands Cal
130 Duty of the School Toward the Child at School S A Knopf New York

Vermont Medical Monthly, Burlington

July

131 Etiology and Treatment of Epilepsy A Morton St Albans
132 Trichinosis C H Beecher, Burlington

Western Medical Review, Omaha, Neb

July

133 Metabolism in Causation of Epilepsy J M Aikin Omaha
134 Disease of the Maxillary Antrum and Secondary Infection of the Brain P H Salter Norfolk Neb
135 Present Tendencies in Obstetric and Gynecologic Practice I C Philbrick Lincoln, Neb

New York State Journal of Medicine, Brooklyn

July

136 *Study of Blood Pressure H L Elsner, Syracuse N Y
137 *Classification of Blood Pressure Cases L I Bishop New York
138 *Aural Inspections and Functional Tests in Healthy Individuals W S Bryant, New York
139 *Syphilitic Lesions of the Eyelids F J Parker New York
140 The Physician as an Educator S A Mereness Oneonta N Y
141 Personal Hygiene F D Reese, Cortland N Y
142 Local Anesthesia for Major and Minor Operations M B Tinker Ithaca N Y
143 History of the Medical Society of the State of New York (Continued) J J Walsh New York
144 Relief of Symptomatic Disturbances During Pregnancy S H Monell New York

136 137—Abstracted in THE JOURNAL, March 2, 1907, page 823

138—Abstracted in THE JOURNAL, Feb 9, 1907, page 534

139—Abstracted in THE JOURNAL, Feb 23, 1907 page 720

Pennsylvania Medical Journal, Athens

July

145 *Relations of Thyroids and Parathyroids A J Smith Philadelphia
146 *Roentgen Treatment of Tuberculous Glands G C Johnston Pittsburg
147 Surgical Tuberculosis G W Guthrie Wilkes Barre
148 *Acute Stage of Bone Tuberculosis H A Wilson Philadelphia
149 *Relation of the Cardiac Muscle and Valves to Arterial Tension W B Stanton Philadelphia
150 Diagnosis of Brain Abscess J W Boyce Philadelphia
151 Pathology and Treatment of Stricture of the Urethra A C Wood Philadelphia

145—Abstracted in THE JOURNAL, Oct 6 1906 page 1130

146, 148—Abstracted in THE JOURNAL Oct 13 1906, page 1221

149—Abstracted in THE JOURNAL, Oct 20 1906, page 1323

FOREIGN

Titles marked with an asterisk (*) are abstracted below Clinical lectures single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

August 3

1 *Science in Its Application to National Health H Davy
2 *Plea for Accuracy of Thought in Medicine W H White
3 *Contagion of Cancer in Human Beings H T Butlin
4 *Case of Acute Enteric Intussusception with Apparent Reduction by Irrigation W Templeton
5 *Iodin and Typhoid D Walsh

1 2 and 3—The papers were discussed editorially in THE JOURNAL Aug 10 1907, p 498

4 **Enteric Intussusception**—Templeton reports a case of acute enteric intussusception in a boy 3 years of age which disappeared completely three times after administration of an enema of warm water The last time, when the boy was on the operating table, the invagination was easily reduced on operation The patient recovered well and passed a distinctly fecal motion, but collapsed thirty six hours later and died

5 **Iodin in Typhoid**—Walsh speaks highly from personal experience of administration of one minim of carbolic acid, and 2 minims of tincture of iodin in a tumbler of water drank as the patient wished Rapid cleaning of the tongue, lowering of temperature, and cessation of diarrhea followed in his experience

The Lancet, London

August 3

6 Science in Its Application to National Health H Davy
7 Plea for Accuracy of Thought in Medicine W H White
8 Contagion of Cancer in Human Beings H T Butlin
9 *Mobile Kidney with Description of Operation for Anterior Nephropexy E S. Bishop.
10 Study of Conditions Producing Anomalous Reaction Met with in Testing Urine for Sugar with Fehling's Solution F W Pavy
11 *Iodin as an Antidote in Carbolic Acid Poisoning J Maberly
12 *Case of Addison's Disease in a Negress R Scheult
13 Case of Tuberculous Cerebrospinal Meningitis S Hodgson

9 **Movable Kidney**—Bishop discusses with great completeness the subject of movable kidney, its importance, diagnosis and treatment He has been unable to obtain satisfactory results with any appliances With regard to the operation, having in view the preponderating occurrence of the condition on the right side, he considers that to attack the organ from the front, instead of by the extraperitoneal route, best fulfills the following requirements The requisite support to the kidney, in the most effective direction, namely, the lower part closure of the opening to the postperitoneal cavity formed b the kidney itself, certain replacement of wandering kidne accurately in its original site, without dragging of vessels o kinking of ureter, support given as is most needed in uprigh position, no introduction of foreign material as a nucleu for calculi into substance of kidney and no dependence o friable tissues for the sutures A new *point d'appui* for th fibers continued into the posterior longitudinal band is also a advantage preventing return by removal of the old drag o the kidney

Bishop uses Morison's cholecystotomy incision, an obliquel transverse one, through the muscles of the abdominal wall outside the rectus from a point corresponding to the chondr tip of the tenth rib backward to one midway between th sternum and spine, one inch below the border of the rib Admirable access is thus gained to the renal fossa The liv being lifted the stomach drawn inward, and the hepatic flexure of the colon depressed by broad retractors or flat sponge the kidney and usually the renal veins are visible and palpab beneath the posterior peritoneum In the displaced conditio of the kidney these veins are seen through the semitranspare peritoneum lying obliquely with their renal extremities muc lower than the spinal On pushing up the kidney they gli upward and become transverse forming a guide both to th correct position of the kidney in which it should be fixed an to the point of entrance of the first fixating suture Th parietal peritoneum being divided transversely over the low fourth of the kidney and the peritoneal edges held apart, curved incision with the concavity upward and outward made in the proper capsule and the lower segment of th capsule loosened from the anterior renal surface, to a thum and lower extremity the capsule remaining attached to th posterior surface of the organ The flap turned downwar and inward leaves the raw surface of the kidney exposed f a corresponding distance two or three sutures attach th loosened edge of the capsule to the fascia beneath and th peritoneum is again sewed up with catgut The anterior su face of the lower leaflet of the true capsule is now in conta with the posterior abdominal wall the posterior surface the peritoneum lying on it and on the bared lower anteri renal tissue The correct position of the kidney being no accurately determined it is held there by the three oute fingers of the left hand while the left forefinger is place on the inner side immediately below the ureteric insertio A long straight needle armed with iodized or chromicized ca gut is pushed directly backward at this point until its poi emerges behind, and another needle carrying the opposite en of the same thread in like manner 1 cm below the first, th thread is then tied over the muscular layer behind the per toneum the capsule and posterior tissues are united on th inner side of the lower pole of the kidney Another pair needles are placed in a similar manner so as to carry a loop of catgut below the inner lower angle, two or three more pairs carry loops below the kidney and if deemed necessary, around the lower and outer side of the organ All these pass through the peritoneum, capsule, subperitoneal connective tissues and muscles When they are drawn tight and tied it will be seen that the kidney is supported by a row of sutures which do not penetrate its substance but effectually fix it and close the cavity beneath it while the union of the capsule and peritoneum has formed a somewhat stronger Toldt's fascia than normally exists on the opposite side Any communicating fibers between the kidneys and the colon are pinned down to the posterior abdominal wall to which henceforth any downward pull is transferred The skin may then be divided behind between the protruding needle points and this incision carried down to the muscular layer over which each suture is tied, or preferably, a curvilinear incision may first be made in the line which would be produced by the protruding points If this is done, it greatly facilitates the passage of the needles, and in later operations Bishop has always done this, in any case, the penetrating sutures are tied and buried by a catgut suture through the skin and subcutaneous tissues The closure of the abdominal wall in this fashion completes the operation

The passage of the fixating loops through the fibrous capsule renders fixation more solid and complete Bishop has performed this operation nine times since February 1906, with no mortality and no relapse, save in the first case in which the fixating needles were passed only through the peritoneum

11 **Iodin for Carbolic Poisoning**—Maberly reports three cases in which he administered successfully tincture of iodin internally, as an antidote when carbolic acid had been swallowed In the case of an adult, a small teaspoonful of the tincture in a teaspoonful of water was drunk slowly In two young children five drops of tincture in a teaspoonful of water were given and repeated at four hour intervals Relief to dysphagia and dyspnea was prompt, and a speedy cure followed Experiment leads the author to the *conclusion that* iodin and phenol in equal quantities neutralize each other

12 **Addison's Disease in Negress**—Scheult of Trinidad reports the case of a negress 55 years of age, in whom the intense and increasing blackness of the face and backs of the hands and fingers, and other irregularly defined areas of pigmentation on the skin and mucous membranes, led with other symptoms to a diagnosis of Addison's disease, which was confirmed at autopsy This is only the second case of Addison's disease that has been recorded in the colony

The Clinical Journal, London

July 10

14 Mucomembranous Colitis R Hutchison
15 Mechanical Appliances in Surgical Treatment J Poland

July 17

16 Salivary Calculi C B Lockwood
17 Malignant Disease of the Mediastinum C Bolton

July 24

18 Abdominal Catastrophes W Turner
19 Management and Treatment of Infantile Eczema J M H Macleod

July 31

20 Intrathoracic Aneurisms and Tumors. F Taylor

Medical Press and Circular, London

June 26

21 Disorders of Micturition in Women P Horrocks
22 *Value of Widal Reaction in Diagnosis of Typhoid W J Wilson
23 Conservative Surgery in Abdominal Operations C B Keetley

July 3

24 Organic Consequences of High Blood Pressure L. Williams.
25 Treatment of Typhoid E Stadelmann
26 *Rhinorrhea in Faucial Diphtheria J D Rolleston
27 *Uremia A. D Russell

July 10

28 Intra Abdominal Adhesions E P Paton
29 The General Practitioner—His Outlook J L Taylor
30 *Diagnosis and Treatment of Fractures of Shaft of Femur T Myles.

July 17

31 Treatment of Carcinoma of the Great Intestine S Pringle
32 The General Practitioner —His Claim to Recognition J L Taylor
33 Friedreich's Ataxia and Syphilis G Pernet
34 Choice of Gelatins for Bacterial Culture Media T T Baker
35 Cancer and Its Treatment J A Shaw Mackenzie

July 24

36 Disorders of Sleep P Stewart
37 The General Practitioner—His Practical Needs J L Taylor
38 Poor Law and Sanitary Administration in Ireland C A Cameron

July 31

39 *Value and Fate of Belated Ovaries J Bland Sutton
40 Headaches and Their Causes I Pineles
41 *Improvements in Notification of Diseases J C McWalter
42 Anti putrescent Medication by Specially Selected Lactic Organisms M Dufour

22 **Widal Reaction**—Wilson analyzes 230 cases of the Widal test, with a view to establishing its trustworthiness One hundred and twelve were positive 118 negative Taking the Widal test to indicate that the patient either was suffering or had suffered from typhoid this was indicated in 109 of the 112 cases, giving a positive reaction the laboratory diagnosis corresponding with the clinical course of the disease in 97 3 per cent Of the 118 negative results 108 patients had not had typhoid, while 10 had previously had it This gives a percentage for correctness of 91 5 Wilson has also examined the blood in 20 cases of cerebrospinal fever, with reference to its action on the typhoid bacillus in dilutions of 1 to 50, and upward Reaction was negative in 15 positive in 5 cases

26 **Rhinorrhea in Faucial Diphtheria**—Rolleston summarizes his article as follows 1 A large percentage of all patients with faucial diphtheria admitted to hospital have a history of rhinorrhea 2 In a certain number of cases which clinically are purely faucial, rhinorrhea is an early symptom, subsequently disappearing without treatment 3 The frequency of this early and transitory rhinorrhea bears a direct relation to the mildness and an inverse relation to the severity of the faucial attack 4 Faucial cases which are also clinically nasal are more severe than those which are clinically faucial only 5 Faucial cases which are also clinically nasal as a rule develop the nasal discharge at a later date than those which are clinically faucial only 6 Early and transitory rhinorrhea is relatively more common in laryngeal cases than in those that are purely faucial

27 **Uremia**—Russell reconsiders the old and abandoned hypothesis of Traube in the light of recent experimental and clinical work on conditions of increased intracranial tension with their associated alterations of blood pressure He arrives at the conclusion that there is evidence to show that the cerebral manifestations of uremia are dependent on cerebral anemia, produced by an increase in intracranial tension resulting from cerebral edema This view lends support also to the theory that epilepsy is produced by sudden cerebral anemia since the *convulsions* of anemia and of idiopathic epilepsy may be absolutely indistinguishable The practical application drawn from the above is that lumbar puncture should be performed in cases of uremia whether coma, convulsions or merely severe headache be the predominant feature The presence of high blood pressure would be helpful as indicating the advisability of lumbar puncture.

30 **Fractures of the Shaft of the Femur**—Myles finds the following constant factors *Invariable* shortening due to overlapping Invariable displacement of lower fragment Invariable rotation of lower fragment which is never in perfect alignment and can not be so It is absolutely impossible to decide by the unaided eye, *touch* or measurements what the actual displacement of the fragment is The author considers the three methods, simple wiring, the Park Hill method and the use of screws, and concludes with the following advice applicable whichever method be used 1 Find out as much as possible regarding the exact condition of the broken bone at the seat of the fracture by a series of *x* ray photographs 2 Think out very carefully beforehand which method is likely to give the best result 3 Drill the bone with a Morse drill set in a brace 4 If using the Park Hill screws see that the tap for cutting the screw thread in the bone is of exactly the same size as the screw to be inserted later, and is but little larger than the Morse drill 5 Never try to hurry the tap, let it cut its own way into the bone 6 When the ends of the fragment are exposed, measure their diameters and mark the screws at a point from their buried ends, *exactly* equal to this depth, so that they may not project through the bone

and perhaps injure the vessels 7 If using the Park Hill method, remember that the wooden faces of the clamps taken from the boiler wet will shrink as they dry, and the screws holding them in position must be tightened in an hour or so 8 Take an x ray photograph the next day from two points 90 degrees apart to insure that the position is maintained 9 Remember that to pass a ligature around the bones, a very large and powerful needle must be used, as the tough tissues about the linea aspera offer a considerable obstacle to the passage of the needle Lastly, practice the operation on a cadaver before trying it on the living subject

39 **Belated Ovaries**—By this term, Bland-Sutton means ovarian tissue left behind after the removal of the uterus etc [This expression does not strike us as felicitous, inasmuch as in common parlance "belated" implies rather lateness in arrival, not merely an overstaying Would not residual or residuary more aptly express what is meant?—ED] Bland-Sutton *in 1897 reversed Tait's procedure in the case of fibroid, by re*moving the uterus and leaving at least one ovary, a procedure which, while violently opposed at first, has now become common His further experience confirms the value of this procedure, particularly in the case of women under 40 as being of service in securing freedom from flushing, promoting domestic happiness and conserving nubility notwithstanding sterility

41 **Notification of Diseases**—McWalter asks if it is worth while to have the vast machinery of notification only to hear of a few cases of typhoid or scarlatina or diphtheria He suggests that the notification system be extended to diseases of every class so that all diseases should be reported to the sanitary authorities at regular intervals, but that the individual names be not disclosed except in those cases in which they are already required This would give a far better picture of the state of public health and lessen the public mistrust of notification, when confined solely to communicable diseases

Annales de l'Institut Pasteur, Paris

4 (XXI No 5 pp 421 499) Trypanosomiases of the Upper Niger (Tryp du Haut Niger) A Laveran
44 Trypanosomiases in Animals in French Guinea (Trypanosomiases animales de la Guinée française) G Martin
45 Mechanism of Antianaphylaxis (Mécanisme de l'antianaphylaxie) S Besredka and E Steinhardt
46 Human Myiasis Caused by *Oestrus ovis L* ("Thim ni' d'Algérie) E Sergent

Annales d Mal d Org Gén-Urin, Paris

47 (XXV No 1 pp 1 79) Study of Phenomena Consequent on Downward Displacement of the Right Kidney to the Third Degree (Accidents provoqués par l'abaissement du rein) P Alglave
48 Unusual Hematuric Kidney Affection (Aff rénale hém) D Taddei
49 (No 2 pp 80 160) Gonorrheal Joint Affections (Le rhumatisme blennorrhagique et son traitement) A Robin
50 Cocainized Oil as Lubricant for Urethra (L'huile cocaïnée chez les urinaires) R Bonneau
51 Three Cases of Bladder Tumors without Hematuria (Tumeurs de la vessie) B Culzy
52 (No 3, pp 161 240) Epithelial Cancers of the Prostate (Canc épith de la prostate) B Motz and F Majewski

Presse Médicale, Paris.

53 (XV Nos 44-47 pp 35 384) *Normal Resistance of Blood Corpuscles to Hemolysis (Résistance globulaire normale) Chauffard and H Rendu
54 Incarcerated Hernia in Infants (Engouement hernlaire chez le nourrisson) A Broca
55 Massage and Ionization in Joint Affections (Massage et ionisation dans les affections articulaires) Durey
56 Gymnastics of the Scapula (Gymn de l'omoplate) P Desfosses
57 *Simple Treatment of Certain Dermatoses and Disfigurements of the Face (Traitement simple de certaines dermatoses etc) L Jacquet
58 Radioscopic Diagnosis of Dilatation of the Stomach (Radioscopie gastrique) G Leven and G Barret
59 Intermittent Form of Pneumonia (Pneumonie à forme intermittente) A Martinet
60 So called Syphilitic Stricture of the Rectum. (Rétrécissement dit Syph) I Schwartz
61 Rôle of Infection in Severe Anemias) (Rôle de l'inf dans les anémies graves) L R Dumas and Poisot

53 **Normal Standard of Resistance of Blood Corpuscles**—The importance that has been acquired by the hemolytic blood test renders indispensable some normal standard of the resisting powers of normal blood corpuscles Chauffard and Rendu propose to use as a standard test solution of physiologic salt solution containing 7 parts per 1 000 NaCl They give a table showing the figures corresponding to thirty one test tubes, the first containing 68 drops of physiologic salt solution the second 66, the third 64 and so on down to 8 drops *Addition of blood to these tubes in turn shows the point* at which the corpuscles begin to be dissolved the fluid in the tube turning pink The resistance is estimated by the number of drops of salt solution in the tube in which this is observed They give examples of the findings from a number of cases of various affections In some the hemolysis occurred abruptly in one or two tubes, in others it showed a more indistinct and gradual course The average for slight hemolysis was tube 42, for distinct hemolysis, tube 38, and for pronounced hemolysis, tube 12, that is, the tubes containing these numbers of drops

57 **Treatment of Dermafoses and Cutaneous Disfigurements of the Face**—Jacquet describes the mechanism by which—through the intermediation of the vagus and sympathetic—irritation is transmitted from the stomach to the nerves of *the face He believes that the face is the reflection of the* stomach far more than the tongue Irritation from the stomach he asserts, affects the trigeminal and first cervical nerves and they in turn act on the tissues, distending the vessels heating and making the face shiny from the hyperfunction of the over stimulated glands In time, this more or less constant irritation and hyperfunctioning leads to exhaustion of the glands and tissues There is no need he declares to invoke the work of bacteria or toxins, the hyperirritation from the stomach alone being sufficient to explain the greasy, pimply thickened aspect of the skin He ascribes the whole trouble to irritation of the stomach mucosa from defectively chewed and more or less hastily swallowed food, citing several examples from his experience in which the patients confessed to bolting their food He usually puts his patients on a fractioned milk diet as the best *means to spare the stomach mu*cosa and to break up the habit of rapid eating When this is accomplished—and not before—he massages the face, taking up the tissues through the entire skin and squeezing them be*tween his fingers for several minutes* He then kneads the skin alone, proceeding systematically from the center to the periphery, the whole, a gradual mechanical excitation, commencing gently and increasing the force until, at the end of a week or two he is applying his entire strength With these simple measures he states that the dyspeptic disturbances are banished and the face is rejuvenated

Archiv f klinische Chirurgie, Berlin

62 (LXXXII No 4 pp 955 1213) *Importance of Abnormal Renal Vessels in Origin of Hydronephrosis (Entstehung Hydronephrose) G Ekehorn
63 *Forty-one Prostatectomies (Exstirpation der Prostata) H Kümmell
64 Lipomatosis of Bladder with Non Traumatic Rupture (Lipomatosis der Harnblase) G Hedren
65 Incarceration of a Duodeno jejunal Hernia in Connection with a Meckel's Diverticulum (Einklemmung einer Hernia etc) Borchard
66 Removable Suture for Radical Operation for Inguinal Hernia (Neue Nahtmethode) F Martini
67 *Total Extirpation of Bladder with Bilateral Ureterostomy (Total Exstirpation der Harnblase etc) T Rovsing
68 *Retention of Food in Stomach Twelve Hours After a Test Meal Always an Indication for a Laparotomy (Magenretention und deren Bedeutung) E Nyrop
69 *Surgery of the Lungs (Chirurgie der Lungen) P L Friedrich
70 *Favorable Influence of Preliminary Saline Infusion on Chloroform Anesthesia (Einfluss der Kochsalzinfusionen auf die Chloroformwirkung) L Burkhardt
71 *New Technic for Gastroenterostomy (Neue Methode der Gastroenterostomie) A N Sinin
72 Combined Drill and Plane Trephine (Stoll's Rhychanotrepan) S N Delitzin
73 Pneumotomies in Russia (Pneumotomien in Russland) A A *Opokin*

62 **Hydronephrosis Caused by Anomalies in the Kidney Vessels**—Ekehorn's patient had suffered for six years from recurring right kidney colic which had grown more frequent and intense since the last pregnancy The only possible cause that could be discovered was an accessory artery entering about the center of the lower half of the kidney The ureter had to turn back on itself to pass over this artery All disturbances ceased when the artery was severed He reviews twenty four somewhat similar cases from the literature showing that anomalies in the kidney vessels are not rare, and that they are liable to cause trouble, especially if the kidney becomes even slightly displaced The attacks of pain in his case had

always been relieved by pressure on the abdomen, which probably acted by pushing up the kidney and thus straightening the ureter to some degree A resistant tumor was palpated in the right kidney region, giving the impression of an enlarged, sensitive kidney, somewhat lower than normal The bladder was normal and the urine from the left kidney was physiologic, while the right urine was very thin but aseptic, containing no formed elements except epithelium from the renal pelvis There was no pus or fever The proportion of sodium chlorid was 4 5 per thousand and of urea 5 per thousand The tumor proved to be the swollen and tender kidney, but the pathologic conditions were not too far advanced for apparently complete restitution

66 **Prostatectomy**—Kümmel's experience indicates that cancerous degeneration of the prostate is of more frequent occurrence than is generally supposed and that removal of the prostate in these and other cases may prove permanently successful The dangers of prostatectomy by the perineal or bladder route are about equal he says If the prostate protrudes deep into the rectum and the abdomen is corpulent, the perineal route should be preferred but if the prostate protrudes more into the bladder the transvesical route is best Cystoscopy generally decides the question The technic of suprapubic prostatectomy is simpler and easier the time required for healing is shorter, and there is less danger of incontinence and of fistula formation Age is not a contraindication to prostatectomy, but advanced arteriosclerosis, diffuse bronchitis, insufficiency of the kidneys which it is impossible to remedy, and entire loss of the contracting power of the bladder, as well as severe impairment of the general health, should contraindicate such an extensive operation except on suspicion of cancer Chronic, incomplete and complete retention of urine should be treated first by the permanent catheter in case introduction is easy and there are no complications If this does not answer the purpose, and if the patient is compelled to use the catheter constantly, operative treatment should be advised

67 **Total Extirpation of Bladder**—Rovsing discusses the various methods of after treatment when the bladder has been removed, dwelling on the inconveniences of each and then describes a technic which has proved entirely satisfactory in three cases in which it has been applied He removes the bladder unopened, as a cystic tumor is shelled out His incision is in the shape of an arc with the convexity down The adherent peritoneum is removed with the bladder if it can not be readily detached The ureters are divided with the cautery, between two ligatures, about 1 cm above In women the neck of the bladder is then loosened and 1 or 2 cm of the urethra The latter is then seized in a small angiotribe and severed back of it In males the *prostate* and bladder must be loosened from the rectum before the urethra can be reached and divided above a small forceps applied below The entire bladder can thus be removed without *hemorrhage* The peritoneum is sutured together again if it had to be opened The cavity left by removal of the bladder is lined with a gauze veil and filled with strips of gauze brought out through the center of the wound He moistens the gauze with a 1 or 2 per cent solution of silver nitrate A short incision is then made in the lumbar region on each side, *extending* from the margin of the erector spinæ outward. The ureter is then hooked up with the forefinger, close to the kidney the lower part is cautiously loosened and the whole brought out In this way the ureters are brought out through the small incision about 8 cm from the median line Funnel shaped retraction is liable to occur if the ureter is fastened directly to the *skin* For this reason he does not fasten the ureter, but leaves it hanging from the wound at symmetrical points on each side, enclosed in a glass vessel after introducing *a* No 12 rubber catheter in such a way that it just passes through the abdominal wall The projecting part of the ureter is protected with a perforated rubber cot The outer end of the exposed portion dries up and shrivels for 2 or 3 cm By the end of a week, when the sutured wound has entirely healed, the necrotic end of the ureter is cut off while the *living* part above is left to project like a small beak shaped urethra standing out above the skin. It soon becomes coated on the outside with epidermis After this the catheter is removed and the flow of urine is controlled with an ingenious apparatus of which an illustrated description is given It consists of an elastic belt Two silver plates are sewn in the belt in the lumbar regions Each plate has a round hole in the center in which fits a shallow silver cup with rubber on the edge, the cup extending below into a short tube connected by a rubber tube with the urinal below Bands at the side of the belt pass under the thighs, and the belt buckles in front and laces behind The rubber bag serving as the urinal is suspended just below the pubic bone The silver cups are inserted from within the belt, and the pressure of the latter holds them tight against the skin A woman of 34 has been wearing this belt for eleven months, day and night, and it has worked to perfection, with no leakage of urine The advantages of the technic described are claimed to be that the bladder can be removed without danger of infiltration of urine or contamination with feces, and there is no danger of secondary infection which is almost inevitable, he declares, when the ureters are implanted in the intestine or vagina

68 **Clinical Importance of Retention of Food in the Stomach.**—Nyrop is assistant in Schou's surgical service at Copenhagen He reviews the evidence on record in regard to operative treatment of stomach affections He has collected 156 cases in which laparotomy was done for gastric affections, about equally divided between malignant and non malignant He classifies and studies these from various points of view All conclusions point, he affirms, to the supreme importance of retention for diagnosis and differentiation Retention may be the result of a malignant or harmless affection, and it may be of functional or organic origin, and in the latter case may be the result of some obstacle to the evacuation of the stomach or to weakness of the stomach musculature But whatever the cause, it indicates operative treatment He pleads for tests for retention in every stomach and intestinal affection, from the mildest to the severest, without exception, as also *in all* abdominal affections accompanied by gastric symptoms The test recommended is the Bourget test meal, consisting of eight or ten stewed prunes, meat and bread Nothing is eaten after this meal, taken at 7 p m, and the next morning, about 7 a m, the contents of the stomach are withdrawn and the stomach is rinsed out The findings in 202 cases are tabulated with the diagnosis and course The results show that the discovery of remains of meat and prunes in the stomach, twelve hours after their ingestion, is always a sign of some notable disturbance in the functioning of the stomach and that this discovery indicates laparotomy In 75 of the 202 patients examined the rinsing fluid was always free from remains of the test meal, and although there were marked evidences of a gastric affection in these cases, yet the absence of retention showed the spasmodic character of the trouble, and its subsidence during sleep, or else that the *stomach* was able to overcome the obstacle during repose In some cases it is better to make the test in the *morning*, giving the test meal at 8 a m and examining the stomach contents at 8 p m He expatiates on the terrible responsibility of the general practitioner who wastes time on internal measures while waiting for a palpable tumor Many cases are cited from personal experience and the literature as examples proving the necessity for the rule "Retention, no matter how slight, twelve hours after a Bourget test meal, is always *an* indication for laparotomy" It is comparatively immaterial, he asserts, whether the underlying trouble is malignant or not

69 **Surgery of the Lungs**—Friedrich's article was delivered as an address at the last German Surgical Congress Several new instruments are described and illustrated and the present status of operative treatment of pulmonary affections is reviewed The benefits of the pneumatic cabinet for varying the atmospheric pressure are emphasized as of invaluable assistance in surgery of the lungs Any one who wishes to undertake lung surgery, Friedrich states, should first familiarize himself with the over pressure and *under* pressure technic and have extensive personal experience with operations on animals before attempting to operate on the human lung

70 **Injection of Saline Solution Before Administration of Chloroform**—Burkhardt states that the injection of saline solution before administration has a favorable influence in *reducing the toxic action of the chloroform* He considers that this is the effect of the dilution of the blood by the salt solution, the coefficient of the absorption being reduced while the blood pressure is kept high, at the same time the vagus remains more sensitive to stimuli By this preliminary dilution of the blood, he claims the organism can tolerate much larger amounts of chloroform without signs of intoxication The infusion must be given just before the operation and must be as abundant as possible Besides the lesser reduction of the blood pressure, he asserts that the rapid recovery after the anesthesia is especially striking Owing to the lesser absorption of the chloroform, a larger proportion is eliminated by the lungs The disagreeable by effects, vomiting, headache etc., are slight or entirely absent These favorable effects of *preliminary infusion of salt solution* were so unmistakable in his experiments on animals that the method was introduced into the clinic at once Each patient about to undergo a major operation received an infusion of from 1,500 to 2,000 c c from a quarter to a half an hour beforehand The results were satisfactory No by effects from the infusion were observed The patients all presented the same phenomena as the animals experimented on, namely, lessened tendency to lower blood pressure and the rapid recovery after the anesthesia It was remarkable to observe the good pulse, even after prolonged general anesthesia, and the absence of headache, vomiting or nausea These preliminary infusions seem to be indicated most for patients with dubious heart and kidney action and in case of much debility and low hemoglobin percentage In extensive operations on the urinary passages he states that the infusion gives a certain feeling of security in regard to avoidance of the dangers inherent in protracted chloroform anesthesia Infusion after the operation seems to have little effect in mitigating the toxic action of the chloroform

71 **New Method of Gastroenterostomy**—Simin takes up a slanting fold in the anterior aspect of the stomach, and incises the edge, pulling it out lengthwise and down as far as possible He then sutures the upper half of the fold, the result being a tube like projection from the lower part of the anterior aspect of the stomach, the end flaring, the whole with the greater curvature of the stomach, resembling a narrow necked pitcher nearly upside down His description is illustrated as he has performed the operation on dogs without any clinical experience to date The technic and results proved excellent in his experiments

Deutsche Zeitschrift f Chirurgie, Leipsic

74 (LXXXVII Nos 4 6 pp 313 572) *Extensive Resection of Small Intestine (Zulassigkeit ausgedehnter Dünndarmresektionen) Storp
75 *Operations on Stomach for Non Malignant Stenosis (Magenop bei benignen Leiden) P Nyrop
76 Successful Technic for Operating in Case of Double Harelip with Snout Like Protusion of Premaxillary Bone (Hasenscharte) H Lorenz
77 Nature of Inflammation (Wesen der Entzündung) E Joseph
78 *Gastric Ulcer Perforating into Open Abdominal Cavity (Akut in die freie Bauchhohle perf Magengeschwür) Federmann
79 *Disinfection with Iodin and Benzin (Jod Benzin Desinf) Heusner
80 Anomalies in Urachus (Urachusanomalien) M Draudt
81 *Chronic Interstitial Pancreatitis (Pankreatitis) A Martina
82 Retrograde Intestinal Incarceration (Retrograde Incarc des Darmes) A Jackh
8 Two Cases of Injury of Thoracic Duct (Ductus thor) A Bohme
84 Two Cases of Kidney Tumors in Children (Nierentumoren) I Mel us
85 Operative Technic for Retrobulbar Tumors (Retrobulbare Tumoren) Tavel
86 Retrorectal Epigastric Hernia and Other Internal Hernias (Innere Bauchbrüche) M v Arx

74 **Extensive Resection of Small Intestine**—Storp gives the details in tabulated form of 22 cases in which from 192 to 520 cm of the small intestine were resected for various reasons The patients did not seem to be incommoded by the loss of such a stretch of intestine and all were in good health at last accounts except for a tendency to diarrhea in a few cases and the death of one patient three weeks after removal of cancer with metastases In a personal case described on account of sarcoma of the root of the mesentery he removed the entire ileum and part of the jejunum a total resection of 510 cm or 17 feet of the small intestine The stumps were united by a primary circular suture, and the patient gained 12 pounds in three months with normal stools but the malignant disease recurred after five months and the patient, a blacksmith of 21, was dismissed as incurable No metastases were detected at the primary operation The good functional results in all these cases justify, he asserts resection of two thirds or even more of the small intestine at need, and resection far into sound tissue

75 **Operative Treatment for Non-Malignant Affections of the Stomach with Stenosis**—Nyrop relates the experiences at Copenhagen with operative treatment of 56 cases of non malignant affections of the stomach The mortality was 3 7 per cent and he ascribes the fact that any of the patients died to the waste of time on internal measures before the case was referred to the surgeon He discusses methods of improving the record for gastroenterostomy and the indications for jejunostomy in case of non malignant gastric affections, citing the opinions of various surgeons and gastrointestinal authorities He advocates resection for chronic ulcers and early intervention, regarding the slightest retention twelve hours after a copious meal as an indication therefor He adds that the best "early operation" for cancer of the stomach is the removal of a chronic ulcer before it has had time to turn into a cancer

78 **Sixteen Cases of Perforating Gastric Ulcer**—Federmann states that 11 of the 16 patients with acute perforation of gastric ulcer were operated on, the others were moribund when received Of the 11 patients operated on, only 4 were saved, and in these the operation had followed the perforation in the first 12 24 or 48 hours The patients who recovered were all men, *the sexes being about equally divided in the total cases* Gastric disturbances had been noted from childhood in all, and in three there had been recent severe trouble in the stomach Intense initial pain in the upper abdomen is the most constant symptom of perforation, the entire abdomen becoming more or less tender, special pain on pressure in the flanks and pouch of Douglas The abdominal wall becomes rigid at once, and persists thus from 12 to 24 hours, when the abdomen becomes distended Initial vomiting is sometimes observed and the areas of dulness may simulate appendicitis Temperature and pulse were normal during the first 12 to 24 hours, but hyperleucocytosis of from 16 000 to 28 000 during the first 24 hours was frequently observed All the patients with leucocytosis under 15,000 succumbed The outcome was decidedly more favorable in the cases in which no attempt at irrigation was made

79 **Iodin-Benzin Disinfection**—Heusner reiterates his recommendation of a mixture of iodin and benzin as superior to all other measures for disinfection of the hands He adds 10 gm of tincture of iodin to 750 gm of benzin and 250 gm of paraffin oil The mixture is no more inflammatory than the same amount of ether or alcohol He pours half a pint into a porcelain dish and scrubs his hands with it, and uses the same amount with a sponge to disinfect the field of operation The mixture does not irritate the hands, the only drawback being a slight discoloration, which soon vanishes It compels the surgeon to wash his hands thoroughly after the operation, and is an index *of the penetrating power of the iodin* He states that no washing is required before the operation, and this statement is enough to condemn the technic in the mind of any thinking surgeon

81 **Chronic Interstitial Pancreatitis**—Martina reports the cure of a patient with chronic interstitial pancreatitis clinically cured by an operation which merely incised the adherent peritoneum for a distance of 10 cm over the enlarged pancreas An iodoform wick was inserted for drainage and the abdomen sutured The patient was a woman of 33 who for four years had presented symptoms suggesting possible pancreatitis After the operation she gained rapidly in weight, the pancreas can no longer be palpated and now, nearly three years since the operation the woman seems to be in perfect health Martina is convinced that this form of pancreatitis is more common than malignant disease in the organ The prognosis is

better he says, with hypertrophy of the pancreas, except in case of multiple small cysts

Munchener medizinische Wochenschrift

87 (LIV, No 23 pp 1113 1160) Preparation of Formaldehyd for Disinfection of Apartments (Autan ein neues Raumdesinfektionsmittel) H Hammerl
88 *Erosions in Stomach Mucosa (Magenerosionen) C Berger
89 Sensitiveness of Testicle to Pressure a Sign of Stone in Kidney (Druckschmerzhaftigkeit des Hodens bei Nierensteine) A Bittorf
90 Affections of Trachea and Bronchi Diagnosed by Bronchoscopy (Tracheo Bronchoskopie) M Mann
91 Mechanism of Hand Walking in Acute Spinal Paralysis Handgang infolge spinaler Kinderlähmung) O Kalb
92 Variations in Structure of Normal Endometrium and in Chronic Endometritis (Bau des Endometrium) A Theilhaber
93 Diagnostic Value of Agglutination Test in Insurance Business (Diagn Wert der Gruber Widalschen Reaktion bei Prüfung der Versorgungsansprüchen) Knauth
94 Acute Poisoning with Citrophen (Citrophenvergiftung) A Goldschmidt
95 Simple Apparatus for Testing Viscosity of Blood (Blutviskosimeter) Determann
96 Influence of Cholin and of Roentgen Rays on Course of Pregnancy (Einfluss des Cholins etc.) I Neumann and O O Fellner
97 *Abdominal Arteriosclerosis and Allied Conditions (Angina abdominis.) F Perutz. Commenced in No 22
98 Study of Reflex Vestibular and Optic Movements of the Eyes and Their Importance for Topical Diagnosis of Paralysis of the Eye Muscles (Reflekt Augenbewegungen und Augenmuskellähmungen) R Barany

88 **Erosions of the Stomach**—Berger gives the details of two cases of an affection of the stomach characterized by pains immediately after eating, weakness and emaciation, with hemorrhages into the stomach No benefit was derived from the usual treatment for gastric ulcer, and autopsy confirmed the clinical diagnosis of erosions of the gastric mucosa Nothing in the history or in the clinical and pathologic history suggested any other affection as causing, accompanying or following the erosions, and no eroded vessel could be discovered on the closest inspection of the stomach This proves that surgical interference would have been useless The only treatment that seems applicable in such cases Berger says, is treatment as for ulcer, with bismuth Benefit seemed to follow in the first case described, as the hemorrhage did not recur during the five days before the patient succumbed to pulmonary embolism

97 **Abdominal Arteriosclerosis**—Perutz describes in detail several cases of what he calls angina abdominalis, the sclerotic condition of the abdominal vessels causing at times violent painful spasms in the abdomen, sometimes merging directly into an attack of the latter He ascribes the attack to spasmodic contraction of the vessels of the intestines, and the resulting local rise in blood pressure The pains are probably located, he asserts, in the sympathetic and the mesenteric plexuses Besides the anatomic changes in the vascular apparatus, functional disturbances, as from the influence of nicotin and other poisons, are liable to induce such spasms Differentiation is frequently difficult and seldom possible until after prolonged observation The diagnosis is aided by the prompt benefit generally derived from drugs which act on the vascular system In one of his patients a gastric ulcer was first diagnosed the predominant symptoms being tenderness in the epigastrium, pains in the stomach after eating, vomiting and backache There was also considerable enlargement of the heart with a presystolic, systolic murmur at all the orifices The pulse was fast but regular A course of treatment for the assumed ulcer brought no improvement and the attacks of pain recurred starting in the stomach region and radiating to the back, with dyspnea and anguish The attacks were generally brought on by physical exertion and were accompanied by vomiting Roentgenoscopy revealed an aneurism of the ascending aorta, and considerable improvement followed administration of remedies to act on the vessels and heart Several patients had long been under treatment elsewhere for assumed gastric catarrh or nervous dyspepsia In two cases a cancer in the stomach was surmised After meals the stomach became distended and relief was sometimes obtained by eructations, at other times the dyspnea was extreme The pulse was at ti[illegible] after the attack, but nothing pathologic could [illegible] circulatory system and there was no occ[illegible] All kinds of dietetic and medicinal measures addressed to the stomach failed to afford relief No benefit was derived from any measures until drugs useful in arteriosclerosis were tried, when improvement at once became manifest The attacks recurred later at times, but were promptly dispelled by digitalis, nitroglycerin, etc In two other cases there had been hematemesis before the patients came under treatment and only the failure of measures addressed to the stomach differentiated the abdominal affection at last In two cases on record the symptoms suggested intestinal occlusion and neither patient survived the laparotomy An topsy revealed in one case extensive sclerosis of the abdominal aorta and in the other old thrombosis of the superior mesenteric artery with partial compensation by collaterals The cause of death in this case was a recent hemorrhage and infarct which had developed in consequence of the altered blood pressure during the operation In another case on record, the apparently indicated laparotomy for a surmised chronic affection of the cecum was postponed on consideration of the abuse of tobacco, the existing myocarditis and the signs of arteriosclerosis elsewhere and the prompt benefit from drugs acting on the blood vessels confirmed the diagnosis of arteriosclerosis of the intestinal vessels One of Perutz's patients was a man of 47 whose stomach had been sensitive for years Of late on lying down after dinner the pulse became small, with anguish dizziness and cold sweat The stomach region was distended and so sensitive that the patient fainted when it was palpated, as also when the contents were aspirated The condition improved somewhat under massage, etc, but a marked change for the better was noted as soon as digitalis and valerian were given Extrasystoles were still occasionally observed but they finally vanished after the patient visited the seashore Cautious evacuation of the intestines and regulation of the diet, with massage sometimes give excellent results, without the necessity for drugs or at most, only potassium iodid Perutz believes that vasomotor disturbances in the splanchnic region are a frequent accompaniment of the obstinate spastic atony of the intestines observed in young persons presenting general myasthenia An abnormally irritable condition of the vessels and nerves, he states is a frequent accompaniment of this condition, and urges that more attention be paid to the anatomic and functional circulatory disturbances accompanying sluggish bowel action and meteorism

Archivio per le Scienze Mediche, Turin

99 (XXXI No 1, pp 1 98) *Experimental Study of Osteomalacia and Rachitis (Osteomalacia e rachitide) B Morpurgo
100 *The Hypophysis (Pituitary Body) and Acromegaly (Ipofisi e acromegalia) G Cagnetto
101 Amino Acids in Urine and Other Organic Fluids in Certain Pathologic Conditions (Ricerca degli amino acidi nelle liquidi organici) F Micheli

99 **Experimental Study of Osteomalacia and Rachitis**—Morpurgo states that in 1899 an epidemic of osteomalacia developed among his laboratory animals, in a certain isolated group of white rats None of the other animals was affected although the conditions seemed to be identical for all A coccus was isolated from the dead animals and inoculation of 193 other animals was followed by development of osteomalacia in 105, with dubious findings in 24 The others were not affected The findings in the positive cases confirmed the assumption that the infection in question was able to induce osteomalacia and rachitic changes in the skeleton The processes of the osteomalacia were identical with those of typical rachitis

100 **The Hypophysis and Acromegaly**—Cagnetto reports a case of a tumor as large as a hen's egg in the recess of the pituitary body The patient was a man of 44 who committed suicide on account of intense headache and encroaching blindness Cagnetto analyzes 4 other cases from his own and 3 from the experience of others In 4 there was no sign of acromegaly, while in the other 4 it was present in a pronounced form He is inclined to ascribe merely a passive rôle to the hypophysis in the genesis of acromegaly which he thinks is probably a primary autointoxication, as this seems to be the only theory which does not conflict in some way with the anatomic findings

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2. Amer Med. A

Beitrage zur Klinik der Tuberkulose, Wurzburg

102 (VII Nos 1-4) *Administration of Old Tuberculin by Inhalation and by Mouth (Stomachale und inhalatorischer Darreichung von Alttuberkulin) F Huhs
103 Etiology and Therapy of Pulmonary Tuberculosis (Lungentuberkulose) A. Dünges
104 *Isolation of the Tuberculous and the Crusade Against Tuberculosis (Isolierung d Tuberkulosen u d Kampf gegen d Tuberkulose) L Bourgeois and I Blumenfeld
105 *Demonstration of Antituberculin (Nachweis v Antituberkulin) H Lüdke
106 Physical Variations in Lung Apices (Physikalisches Verhalten beider Lungenspitzen) F Seufferheld
107 *Tuberculin in Pulmonary Tuberculosis (Tuberkulinbehandlung d Lungentuberkulose) Hammer
108 *Pulmonary Phthisis and Induced Abortion (Phthisis pulmonum u Abortus provocatus) P T de B P van Amstel
109 *Curability of Tuberculosis and Tuberculin in Children (Heilbarkeit d Tuberkulose u Tuberkulin im Kindesalter) Engel
110 Familial Tuberculosis and Its Relation to Infection and Hereditary Transmission (Familiare Belastung d Tuberkulose) W Weinberg
111 Method of Obtaining Cow's Milk Free from Bacillus Tuberculosis and Other Bacteria (Gewinnung einer lebenden Tuberkelbazillen u anderen Keimen freien unveränderten Kuhmilch) Waele, Sugg and Vandevelde
112 *Id* *H Much and P H Römer*
113 Tuberculosis of Middle and Internal Ear (Tuberkulose d mittleren u inneren Ohres) H Herzog
114 *Relations of Bony Thorax to Lungs and Their Significance to Recovery from Pulmonary Phthisis (Beziehungen d knocheren Thorax z d Lungen u ihre Bedeutung d. Genese d tuberkulosen Lungenphthise) C Hart
115 Bronchophony of Whispering Voice (Flüsterstimme) E Masing

102 **Old Tuberculin by Mouth and by Inhalation**—Huhs studied the effects of the administration of old tuberculin by mouth in thirteen cases and by inhalation in two cases and found that in the former, even when large doses of tuberculin were administered, no reaction, either local or general, occurred In the latter, in which the tuberculin was administered by inhalation, a typical general and local reaction occurred, but the results were by no means so reliable as in cases in which tuberculin is administered by injection Huhs is of the opinion, therefore, that these two methods of administering tuberculin are of no value from the standpoint of therapeutics

104 **Crusade Against Tuberculosis**—Bourgeois and Blumenfeld discuss the treatment of tuberculosis in its various stages, in the dispensary, in the hospital and in the sanatorium The paper is the report of Bourgeois as a member of the council of surveillance of the *Assistance Publique* of Paris

105 **Antituberculin**—As the result of experiments on animals and observation of clinical cases, Lüdke believes that antituberculin is formed in the tissues, and is taken up by the blood The results of his findings are set forth in detail in eight tables, and the report of twenty clinical cases

107 **Tuberculin in Pulmonary Tuberculosis**—Hammer reports 50 cases in which tuberculin was used These cases represent all stages of the disease and the results obtained lead the author to say without equivocation that tuberculin may be used in the treatment of all cases of pulmonary tuberculosis, even the most severe

108 **Pulmonary Phthisis and Abortion**—Van Amsdel says that the pregnancy influences unfavorably an existing pulmonary phthisis, that the offspring of a tuberculous mother possess diminished resistance and a hereditary predisposition to tuberculous processes, and especially pulmonary phthisis, that in such persons pregnancy often is the exciting cause for the development of tuberculous processes He urges that it is the physician's duty to warn women suffering from pulmonary phthisis against entering wedlock, to point out the necessity and the benefits of a facultative sterility, and in the event of pregnancy to advise its interruption The earlier the stage of the disease, the more urgent is the indication for the interruption of the pregnancy, although this procedure is always indicated so far as the interests of the mother are concerned Furthermore, the fact that the offspring will possess little resistance against tuberculosis and that it will be ill fitted to thrive and endure also is taken as an indication for the justifiable production of abortion in such cases

109 **Tuberculosis in Children**—Engel claims that it is possible to cure children who have tuberculosis, provided the disease is limited to the lymph glands

114 **Abnormalities of Thorax.**—Hart attempts to show that any abnormality of the bony wall of the thorax predisposes to pulmonary tuberculosis, and urges as a prophylactic measure, such exercises as will enlarge the thorax and thus increase the excursions of the lung during respiration

Centralblatt f d Grenzgebiete d Med u Chir, Jena.

116 (X, 1 10) Scarlatina Puerperalis R Pollak
117 Roentgen Treatment of Malignant Tumors K H Schirmer
118 Neuropathic Affections of Bones (Neuropathischen Knochenaffektionen) F Tedesko
119 Status of Spinal Anesthesia (Rückenmarksanästhesie) F Venus

Books Received

Hygienic Laboratory Bulletin No 36 Studies on Hypersusceptibility and Immunity By M J Rosenau and John F Anderson Paper Pp 69 Washington Government Printing Office 1907

Arbeiten aus dem Pharmazeutischen Institut der Universität Berlin Herausgegeben von Dr H Thoms Professor und Direktor des Pharmazeutischen Institutes der Universität, Berlin Cloth Pp 340 Berlin Urban & Schwarzenberg, 1907

Transactions of the American Pediatric Society, Eighteenth Session Held May 30 June 1, 1906 Edited by L E La Fétra M D Vol XVIII Reprinted from Archives of Pediatrics 1906 1907 Cloth Pp 307 New York E B Treat & Co, 1907

Thirtieth Annual Report of the Board of Health of the State of New Jersey, 1906 and Annual Report of the Bureau of Vital Statistics Cloth Pp 456 Trenton, N J John L Murphy Pub Co, 1907

Physiology of Alimentation By Dr Martin H Fischer Professor of Pathology in the Oakland College of Medicine First Edition Cloth Price $2 00 net Pp 348 New York John Wiley & Sons London Chapman & Hall, 1907

Hackley Hospital Muskegon, Michigan Established May 28 1902 Dedicated and Opened Nov 17, 1904 Report from Nov 17 1904, to April 30, 1907 Paper Pp 52

Monthly Summary of Commerce and Labor of the United States No 12, June, 1907 Paper Pp 230 Washington Government Printing Office

NEW PATENTS.

Recent patents of interest to physicians

861159	Surgical needle William R Burch, Chicago
861231	Surgical ligature Arthur W Clark, Conshohocken Pa.
861019	Therapeutic lamp Harley L Coger Minneapolis
860906	Stethoscope Fredrick Dittmar Philadelphia
860652	Suspensory Henry A Frye New York
860862	Fumigator Menzo R Fuller Greenville, Texas
860659	Soda fountain syrup pump F H Hecker, Los Angeles, Cal
860669	Abdominal massage apparatus J C Johansen, Copenhagen Denmark
861571	Disinfecting or antiseptic composition and making the same Henry S Blackmore Mount Vernon, N Y
861257	Hernial truss John W Bunker New York
861272	Operating table James H Downey, Gainesville Ga
861836	Corn and callous shaver George Havell Newark N J
861851	Electrical heater for hot water bags C V Hill St Louis
861982	Artificial hand Jacob Hinz Jr White Lake S D
861853	Ligature container B K. Hollister, Chicago
861380	Stopper for water bags and the like John Nuttall, Bridgeport Conn
861610	Massage apparatus Richard S Sarver, Kansas City Mo
861913	Eye-testing instrument Peter G Stormer, Johnstown, Pa
862379	Poison bottle. James Banford Brooklyn
862794	Facial bandage Agnes L Black Sacramento Cal
862304	Disinfecting apparatus W T Bowerman, Detroit
862385	Thermometer sterilizer and holder G M Brubaker, Mercersburg Pa
862712	Medical instrument J S Collins, Carlinville, Ill.
862619	Surgeon s needle holder Charles Driest, New York
862455	Crutch Mark J Dunkel New Bloomfield, Pa
862737	Atomizer H A Hill and J A Lindstrom Northampton, Pa
862837	Truss Thomas E Martin Buffalo N Y
862190	Surgical foot rest James H O Reilly, Louisville, Ky
862193	Truss Emery H Parker Chicago
862507	Rectal injection apparatus Charles L Quimby, New York
862763	Medicated bougie Ludwig Sensburg Munich, Germany
862771	Medicine case Robert L Taylor Memphis, Tenn
862856	Vibrative liquid atomizer and mixer James W Tygard New York
862857	Santalol carbonate Hermann Vieth, Ludwigshafen on the Rhine Germany
862858	Insipid sandalwood oil preparations Hermann Vieth Ludwigshafen on the Rhine Germany
862781	Electrotherapeutic apparatus Leonidas G Woolley Elma Ohio
862145	Massage apparatus Sylvanus F Bowser Fort Wayne Ind
862144	Flexible massage device Sylvanus F Bowser, Fort Wayne Ind
862976	Obtaining ammonia etc Heinrich [illegible] Essen on the Ruhr Germany
862417	Process to utilize the inferior ca[illegible] Francisco Moyano Aguilas Spain
862127	Soda water bottling [illegible] more

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Original Articles

SMOKE IN RELATION TO HEALTH *

A JACOBI, MD, LLD

NEW YORK CITY

Up to the year 1000 the German home had its fireplace in the center The smoke escaped through a big hole above, which was covered by a second roof that kept the rain out Light got in as best it could The Westphalian home in which I was born was still of that kind, like a hundred thousand other North German peasant dwellings In the oldest times a few holes were also cut into the sides of the house My people, however, had small glass windows, but then I was born in 1830—after Christ, you know Wood and peat were exclusively used until the end of the twelfth century, coal is mentioned. The first information comes from Luttich (Liege) In the fourteenth century coal was used in Aix-la-Chapelle, in 1429, about the river Saar Since that time, but never like the present, was the air filled with carbon dioxid, sulphurous acid, sulphuric acid, hydrochloric acid, and sulphid of hydrogen An equal annoyance, if not danger, is caused by the unconsumed soot[1]

Dr Charles A L Reed, chairman of the Committee on Medical Legislation of the American Medical Association, delivered an address[2] on the subject of smoke before the Woman's Club of Cincinnati On that occasion the medical aspect of the question was not emphasized But smoke-filled air imposes extra and unnecessary drudgery on the housekeeper Woman's privilege to wear clean clothing is ruthlessly disregarded by the makers of smoke and the permitting municipalities Women should, therefore, individually and through their organizations protest vigorously against the present conditions Moral dirt also is closely united to physical dirt, and a clean community has the better chance to avoid degeneracy

The ill conditions are national and not local, so that something more than local effort is needed to combat them Therefore, he proposes cooperation, national in extent, to create public sentiment, to determine the facts and adjust conflicting interests, to demonstrate plans and appliances for smoke prevention, and to formulate a standard law to secure uniform regulation of the evil all over the country He suggested a national "antismoke convention" to execute these plans, this convention to be really representative of all concerned interests, and to be instructed by competent specialists engineers physicians, sanitarians, manufacturers, attorneys and others The assistance of the press must be secured

Such is also the opinion expressed in an editorial of The Journal of the American Medical Association, May 20, 1905, which, moreover, expresses its categoric opinion that "the crusade against unnecessary city smoke is more social than medical, and yet has a real interest for physicians The direct harmfulness of smoke to the human organism is not wholly clear" Thus The Journal claims or admits that smoke and other products of soft coal semi-combustion vitiate the atmosphere, depress the organism, injure the integuments cause deficient oxygenization and edema, mainly among children, and oblige people to seek the country

It is time we should drop the idea that the smoke question is only social and not medical If that were so the natural sciences would have little to do with it, and not even the law of the land or of esthetics could ever reach it

I have availed myself of some opportunities to inquire from medical friends in Pittsburg, Cincinnati and Chicago whether in their knowledge clinical statistics, autopsies or other experience have been gathered with a view of enlightening the medical profession on the smoke nuisance in its sanitary aspects Only from that point of view can we hope to aid in ridding the community of an anomaly created by the recklessness of modern industry, which is always willing to coin gold out of human corpses of its own making

Now it happens that The Journal of the American Medical Association, July 7, 1906, arrives at the conclusion, based in part on Ascher's statistics and experiments, that the fighting of the smoke nuisance "should be made part of the general plan of the campaign now in progress against tuberculosis and pneumonia" Since that time the Philadelphia County Medical Society has discussed the problem in its meeting of June 27, 1906, in which Drs J Madison Taylor, W M L Coplin, C G Grayson, L Webster Fox and Henry Leffmann took part That the nose, throat and eyes are directly injured by smoke was admitted beyond doubt, but whether the presence of soot in human lungs is an indifferent matter or an injury was left undecided It must have pleased the sinning part of the industrial world to hear from a participant in an unprepared and unguaranteed professional, if not medical, discussion the statement that there is little evidence to show that "the presence of smoke in the air increases especially"—what, if you please, is especially?—"the morbidity or mortality of a community"[3] Dr Henry Leffmann also spoke of the practicability of preventing the smoke nuisance

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association Atlantic City June 1907

[1] While this paper was awaiting publication Dr Theodore A Schaefer had an elaborate essay full of quotations and sugges[illegible] in the Boston Medical and Surgical Journal July 25 1907 [illegible] Contamination of Air with Sulphur Dioxid London [illegible]ding to his statements burns 30 000 tons of coal daily which [illegible]es rise to 300 tons of soot and large quantities of carbon dioxid [illegible] sulphur dioxid This last named gas is converted into sul[illegible] [illegible] tons of which are annually brought down in [illegible] the cities of Glasgow or in Manchester It [illegible] iron pyrites which form 3 per cent. of the [illegible] acid are contained in one million parts [illegible] intensely and the lungs of men—? anu [illegible] phuric acid [illegible] the rain falling [illegible] owes its origin to [illegible] coal When 40 part[illegible] of air the vegetation [illegible]

[2] Amer Med. A [illegible] 1905

[3] The Journal A. M. A Aug 4 1906

The sixty-sixth annual report of the registrar general of England demonstrates an increase of the mortality depending on bronchitis and pneumonia in England until the quinquennium of 1891-1895, and a considerable decrease since In connection with the latter fact L W Chubb[4] observes that eighty cities—London, Liverpool, Manchester, Sheffield, etc —report a decrease of smoke since that time Brodie, the meteorologist, points to the diminution of London fog which is occasioned by the absorption of atmospheric water by sulphur dioxid with its specific gravity of 2 25 His colleague, Rollo Russel, reports a marked effect of the compulsory prohibition by law of smoke

According to Mr James River, the medical officer of Manchester, the fog days and the mortality from acute pulmonary diseases have become less There were in Manchester during each of the five years from 1896 to 1900, inclusive, 36 8 fog days, in the five years from 1901 to 1905, inclusive, 23 4, and of 1 000 deaths there were in the former quinquennium, among all ages, 5 04 per cent, in the second 4 28 per cent, among infants under 1 year 33 53 and 31 10 deaths, respectively In the same report Primrose[5] publishes the results of investigations made in Glasgow on rain, which prove the decrease both of acids and of soot[6]

His method of a chemical examination of the atmosphere resembles that which W L Russell followed in London and Angus Smith before him[7] After them J B Cohen, the professor of organic chemistry in Leeds, suggested an efficient, mostly new, examination both of the rain and the air, in a book of his own The Air of Towns, reprinted from the Smithsonian Reports of 1895, Washington

The experience gathered in England has suggested a number of rules which are vigorously enforced in a number of towns In London and Manchester no factory chimney may expel a black smoke for more than a minute every hour In Professor Harvey Littlejohn's report on the causes and prevention of smoke from manufacturing chimneys (city of Sheffield, 1897) are enumerated twenty-two cities which enforce a duration of not more than from one to fifteen minutes in which black smoke may be expelled each hour Dr Councilman tells me that the new buildings of the Harvard Medical School do not suffer from smoke at all In all those reports the important factor of the chimneys of private houses and open fireplaces, however is not brought into consideration Altogether, however, the common law declares the expulsion of smoke from chimneys to be a nuisance

The public health act of 1875, section 91, subsection 7, which is valid for England with the exception of London and a few other cities that have local regulations of their own demands however, that the smoke of factories must be consumed as much as practicable by means of the ever improving technical discoveries and inventions, in the following words 'That such fireplace or furnace is constructed in such a manner as to consume as far as practicable (having regard to the nature of the manufacture or trade) all smoke arising therefrom and that such fireplace or furnace has been carefully attended to by the person having the charge thereof'

The official work of the health boards has been aided by a number of coal smoke abatement societies in London and elsewhere, which employ their own watchers and inspectors alongside those employed by the government It will not take very long before many manufacturers and engineers cease to object to the compulsory avoidance of smoke, on account of the acknowledged economic advantage due to a saving of coal

That coal will be replaced by gas, which burns without smoke, appears more probable from year to year Even we in America, who are notoriously slow in adopting sanitary measures, even theoretically, begin to replace coal by gas for domestic purposes A cheap gas may be and has been manufactured in South Staffordshire and in London, which, while not fit for illumination, is perfectly so for developing smokeless heat

In a presidential address before a conference on smoke abatement, during 1906, Sir Oliver Lodge admonished his audience directly not to permit the combustion in cities of coal, but to insist instead on the regular preparation of cheap gas I am afraid we in America have been too slow even to utilize natural gas as we should have done

In a book on the influence of smoke on the respiratory organs (Stuttgart, 1905) Dr Louis Ascher arrives at the following conclusions Since 1875 acute inflammations of the respiratory organs have increased in Germany, England and America[8] This increase was studied in a possible connection with the diminution of the power of resistance and with possible climatic or infectious causes Neither of these factors could be charged with producing the increase of acute inflammatory respiratory ailments

Carefully collected facts prove a higher mortality from these diseases both in towns and country, in the regions of the Rhine and in Silesia, where much smoke is produced That is mainly so in the coal mines of the Ruhr river district in Westphalia Here, where the air is always black, the mortality from inflammatory respiratory diseases among men is greater by 135 per cent than among the Prussian males of equal age, of those so suffering the majority were those born in that region, the minority consisted of such as had come from distant country districts Altogether it appears statistically certain that smoke causes a disposition for acute pulmonary diseases and accelerates the course of pulmonary tuberculosis

It was also found that in a humid atmosphere coal dust was aspirated in larger quantities and in less time than in dry weather Tubercular animals that were made to inhale moderate quantities of smoke through a period of ten hours died sooner than those which inhaled less of it The question whether the inhalation of a moderate amount of smoke causes a disposition for acute respiratory inflammations had to be answered affirmatively for inhalation of smoke followed by that of aspergillus accelerated the causation of inflammation, when compared with the animals not so exposed to the fungus

Further and final conclusions are as follows The mortality from acute inflammatory pulmonary diseases is on the increase, mainly that of children and old people The cause is to be sought for in the contamination of the atmosphere by smoke In industrial districts the mortality of nurslings was six times larger than in [illegible] cultural communities It was found that [illegible] districts had a larger mortality than [illegible] centers for instance, the textile [illegible] tality of coal miners surpasses that of the rest of the male population by 130 per cent , the indigenous suffer more than the immigrant workmen Animals infected with aspergillus without having been previously exposed to smoke inhalation did not contract pneumonia like those which were forced to inhale smoke

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[4] Report on returns by local authorities with regard to the carrying out of their powers and duties in the matter of smoke abatement London 1905 Conference on Smoke Abatement

[5] A plea for a systematic comparative analysis of the air in towns

[6] Ascher (L) The Fight Against Smoke in England and Germany D Viertelj f öff Ges xxxix 2 1907

[7] Monthly weather report for April 1854, London, 1854

[8] Klebs Amer Med., vi, No 24

Bartel and Neumann, in their work on experimental inhalation tuberculosis of the guinea-pig[9] found that such guinea-pigs as had inhaled a moderate amount of smoke on account of their being kept in a large city died of pulmonary tuberculosis in less time than those which showed smoke-free lungs

A serio-comic contrast is furnished by the opinions of those who assert that soot in the lungs prevents tuberculosis On that theory the metal grinders of Sheffield had until twenty-five years ago the habit of going into places filled with coal dust after having been in metal dust all day What was called "grinder's asthma' was and is tuberculosis There were few that escaped I understand the use of respirators is not common even to-day If here and there little tuberculosis is found it is because very strong and healthy persons are preferred for that kind of work But even M Mendelsohn[10] met many persons dying of tuberculosis whose symptoms never showed themselves until they worked in coal dust and smoke

By what road will smoke and coal dust get into the lungs? Its invasion may be either by inhalation or by the absorption from the intestinal tract and the lymph apparatus Dr Julius Arnold, professor of pathologic anatomy in Heidelberg, wrote a classical book in 1885 with the title Researches on Dust Inhalation and Dust Metastasis He admits the presence of carbon during his experiments in the interior of the intestinal tract, but never in the wall of the tract or in the chyle vessels and mesenteric glands except in rare instances when a few stained cells only might be found in the tissue of the intestine and in the mesenteric glands Villaret had suggested, in 1862, the probability of an intestinal origin of pulmonary anthracosis, but Arnold's results were too positive to be denied It appears, however that the frequent recent discussions in reference to the invasion of pulmonary tuberculosis, either by inhalation or by deglutition, tempted Vansteenberge and Grysez[11] to resume experiments relating to the same subject They watched the progress of coloring matter introduced into the intestinal canal and the peritoneum Contrary to what is known to be a fact, viz , that granular material circulating in the blood passes the lungs and is deposited in the liver, spleen, bone marrow and the lymph bodies, they asserted to have found that coloring material passed from the intestinal tract and the peritoneum through the lymph circulation into the lungs as a copious deposit They met with this affirmative result preferably in adult animals, overlooking perhaps the fact that a certain degree of anthracosis is noticed in every animal that has passed its life in contaminated city air, but not in the very young, simply because the latter has not respired so long

So Aschoff,[12] W H Schulze,[13] Mironesco[14] M Cohn[15] and finally a few weeks ago H Beitzke[16] have demonstrated that Chinese ink, introduced into the abdominal cavity, is absorbed into the lymph ducts of the mesenteric lymph bodies and of the diaphragm, the sub- and supra-diaphragmatic glands, the thoracic duct the vena mammaria interna and the blood From here it enters the bone marrow, the spleen, the liver, but not the lungs These experiments were very numerous and their results uniform All of which proves that anthracosis of the lungs is directly caused by inhalation, and that smoke enters the lungs directly from the contaminated atmosphere, either through the mouth or through the nostrils which exert their protecting influence to an insufficient extent only

Meanwhile Section 96 of the Sanitary Code of the New York Health Department, in consequence of a decision "handed down" by Mr Justice Dickey of the Supreme Court, has been emasculated so as to read

"The owners, lessees, tenants occupants and managers of every building, vessel and place in or on which a locomotive or stationary engine, furnace or boilers are used, shall cause all ashes cinders, rubbish, dirt and refuse to be removed to some proper place, so that same shall not accumulate, nor shall any person cause suffer or allow smoke, cinders, dust, gas steam or offensive or noisome odors to escape or be discharged from any such building, vessel or place to the detriment or annoyance of any person or persons not being therein or thereon engaged '

No summary arrests of the evil doers are permitted Civil actions for the penalty of $250 only are allowed, under Section 1262 of the Greater New York Charter, it takes a delay of one month in the issuing of an order to arrest a violator, during all of which time the nuisance continues and the public suffers, when the same is finally abated the public enemy suffers absolutely no penalty whatsoever and pays merely the few dollars costs of bringing the action to the corporation counsel

As usual, the laws appear to be made to protect not the people but their enemies

EDUCATIONAL METHODS IN THE CAMPAIGN AGAINST TUBERCULOSIS *

LIVINGSTON FARRAND,

NEW YORK CITY

Fortunately for the initial enthusiasm with which a campaign for the prevention of tuberculosis may be undertaken by any community, there is no difference of opinion as to what the chief task may be It is the education of the public with regard to a few simple facts The accomplishment of that task, however, is one which calls for all the ingenuity and skill that expert knowledge can furnish or specific experience can teach

The organized crusade now under way against this disease is rapidly uncovering the conditions which constitute its stronghold and while opening up innumerable lines of promising attack, is also making more and more clear the baffling complexity of the work in which we are engaged

We may start, I presume, with the general proposition that tuberculosis is infectious, that it is preventable and that in its early stages it is curable It is its preventability which justifies the expenditure of energy now devoted to the campaign and will justify the immensely greater expenditure which will certainly be called for in the immediate future If we are to prevent we must necessarily deal with the conditions which cause, and those especially subject to such conditions will form the classes most necessary to reach

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[9] Wien klin Wochschr 1906 Nos 7 and 8
[10] Traumatic phthisis Berlin 1885
[11] Intestinal Origin of Pulmonary Tuberculosis Ann Pasteur,
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phuric acid, th Klinik der Tuberculose Vol 6.
the rain falling Wochschr 1906 xxxv
owes its origin to 1 No 27
coal When 40 schr 1906 No 14
of air the vegetation part 07 187
2 Amer Med, 4

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907

These conditions are, of course, pre-eminently those of the overworked and the badly nourished, of the badly housed and of those who are totally ignorant of the simplest rules of a proper hygiene, of those to whom a higher standard of living may be vaguely desirable as a material or social comfort but not a realized duty to self or to family Our task then is to carry to these classes, by every possible method, not only a knowledge of the facts, but appreciation of the necessity of action

The experience of the last few years has shown that to reach results in any community organization is necessary *This is true not only to avoid needless waste of* energy and resource, but to insure an effective covering of the field of operation

The conditions existing in the cities and towns of the United States are so varied that it is impossible to lay down any rule or scheme of organization which will apply to all cases In certain communities the work can best be undertaken by some existing philanthropic or other organization, while in others it is better for a new society to organize on an independent basis It is nearly always true that the starting point for effective work is the devoted enthusiasm of some one man or woman who has the gift of communicating this enthusiasm to others of his or her type

One general postulate can, I think, be laid down, and that is the necessity of cooperation between the medical profession and the laity This is applicable to all localities An educational campaign planned and conducted by physicians alone invariably remains dignified and ethical and entirely inefficient, while a crusade by laymen without medical cooperation lacks the authority and conviction which only expert knowledge and the confidence borne of it can provide in any movement connected with disease

With an organization reached, a definite program of operation is imperative Here also no great difficulty should be encountered The main points are

1 Cooperation with the public health authorities and with all organized movements which can contribute in any way to the diminution of tuberculosis

2 Agitation for the passage and enforcement of proper legislation, e g, registration of tuberculosis, anti spitting ordinances adequate disinfection, etc

3 Initiation and prosecution of movements for the establishment of adequate hospital, sanatorium and dispensary facilities for the care of the tuberculous

4 The education of the public with regard to the facts of the disease

It is this last item which, brief as is its statement, calls for the real persistence and energy in the campaign

The means of education are varied and can best be discussed under separate heads

LITERATURE

The preparation and distribution of suitable literature take for some reasons, the leading place Here the first point of consideration is the character of the groups to be reached There is not, and never will be, any leaflet, pamphlet or book adapted to all types

(a) Always necessary is some short, pithy striking statement which can be printed in inexpensive form, preferably on one or two pages and distributed freely The preparation of such material affords scope for all the literary, advertising or other ability available in a society There are now in existence a large number of such leaflets prepared by the various local associations, and each one regards its own as the best Whatever the wording, the form should be striking and the material durable Red ink and cardboard are distinct assets and colloquial English is far better than polished rhetoric

(b) There is also need of a statement somewhat more extended in form which shall give in greater detail the reasons for caution, the principles of hygienic living, rules for consumptives and those living with them, and specific instruction in compact form with regard to everyday life, necessity of medical care, disinfection etc This can be best put out in pamphlet form and preferably of a size that can be easily placed in the pocket

(c) Of more elaborate general books there are a number *more or less well adapted to their purposes* There is now under consideration the preparation of a handbook somewhat after the form of that issued by the Charity Organization Society of New York, which shall be written by recognized authorities and issued by the National Association

(d) Literature for special classes of the community, such as teachers, school children, workers in special trades etc, is increasing in amount and by constant revision by various committees is gradually adapting itself to its end

Translations into the many languages spoken in the United States is, of course, an absolute necessity in many communities and does not present any great obstacle The need of translation is naturally greatest for the small cards and leaflets intended for those of slender education, but they are precisely the ones for whom the information is imperative

EXHIBITION

In casting about for new and effective methods of educating the public the exhibition was selected and has proved probably the most valuable single method at our disposal This is an effort to show in graphic form the same simple facts that the literature mentioned above sets forth We may as well recognize the truth that the majority of people will not read but will look at a "show" (particularly if it be free), and as a consequence thousands are reached by the exhibition who would never be touched by the printed page

It is impossible to specify in detail the material available for exhibition purposes, but it can readily be grouped in one of several ways There should be

(1) A demonstration of conditions This can be done by maps and charts setting forth the prevalence of tuberculosis in the United States, in the given states and cities, in different trades, races, etc Valuable maps and charts for reproduction and enlargement may be found in the admirable paper by Miss Brandt, in the Handbook on Tuberculosis published by the Charity Organization Society of New York City in 1903. The attention of *the public can often be caught also by a striking state*ment of the economic loss to the country or community by the deaths from this disease

(2) The infectious character of tuberculosis and the conditions which cause it can be shown by pathologic specimens or by colored plates, charts and photographs More stress however, should be laid on the housing, social and industrial conditions which favor infection, and here a wide field is open Enlarged photographs of local conditions may be utilized and *will always attract atten*tion, but with the views of dark unventilated homes and workshops and unhealthy environment should always,

if possible, be shown what can be accomplished under similar conditions by hygienic treatment This phase of the subject shades into

(3) Prevention Here should come in views of model tenements, playgrounds, the work of various organizations for the betterment of social conditions, the results of proper health regulations, anti-spitting ordinances and the various methods that have been found effective in communities where the campaign has already been undertaken

Exhibits of the literature and results of successful antituberculosis organizations will prove stimulating and effective

(4) Treatment and Cure This aspect is capable of more effective exhibition than any other Photographs and models of sanatoria, open-air sleeping shacks, tents, etc, may be utilized to whatever extent is deemed desirable It should always be remembered in this connection that it is the human side which appeals and that the average man, woman or child will notice with interest pictures of patients where ground plans or elevations of buildings will be passed by without attention Striking photographs of patients' outdoor life in winter treatment on roofs where better facilities are not available, and other phases of the subject will be found desirable

There should always be some statement of the evils of "patent medicines" so exhibited that it can not be overlooked even by the casual visitor A large sign containing some specially drawn-up resolution of a local medical body or some other group of authority is perhaps the easiest method of covering this point A statement of the ingredients of the patent medicines most in favor in a given community would also invariably prove effective

In connection with the exhibitions there should be as many lectures or public talks as can be arranged, and more important than all are the informal demonstrations and explanations to groups of visitors by volunteer assistants, young physicians or students who can usually be procured for that purpose

Lantern slides should be obtained and will do much to draw and hold the audience which it is particularly desired to attract

Fortunately the cost of a small but effective exhibit is not great With the facilities available in any community for the reproduction of charts, etc, and the volunteer services which can usually be counted on, the necessary models and photographs for an effective exhibit can be procured for from $100 to $200 The total cost of an exhibition which can be set up in one large room, say 30x40 feet, could probably be brought under a figure of $300 Naturally the more money available the more attractive can the material be made, and experience is showing that money so devoted is well spent

In our largest cities it is desirable that an exhibition of fairly comprehensive scope should be made permanent and shown continuously This is already being done in a number of places with extraordinary results

Every state should also have an exhibition which can be readily transported and sent to the smaller towns and communities where a permanent exhibition would probably not be called for Such a state exhibit can be formed and controlled either by a state association, where such exists, or by the board of health when that body is sufficiently advanced to appreciate its responsibility

A most important factor in this connection is the place of exhibition Esthetic surroundings should be sacrificed to convenience of access, and it is much better to choose a vacant store on one of the busiest streets of a city than the imposing rooms of a public library or museum which can often be more easily obtained

It can be laid down as a truth that the effect of an exhibition is measured by the degree of its publicity This can best be accomplished by placing the exhibit in such a situation that it can not be overlooked

LECTURES AND MEETINGS

The third method of education of importance comparable to the two already discussed is that of the public lecture Possibly this should logically take precedence of literature and exhibition In small communities it is often not only the easiest to arrange, but the quickest in its results The real difficulty in this connection is in procuring enough speakers of force and effectiveness to insure a systematic series of meetings It is too often the case that intense interest in this work will be aroused for a single evening or a single week and then be allowed to lapse for lack of organized plan and persistent energy Where effective medical men can be secured for public lectures they should always be utilized The authority with which they speak impresses the public in a way which the enthusiasm of a layman can never rival

A systematic division of any community into groups for the purposes of public lectures is not only desirable but necessary Special talks adapted to special classes should be arranged and a definite plan followed during the year The school teachers, school children, churches, women's clubs, Y M C A 's and, above all, the trades unions, should be met and the facts concerning tuberculosis in their relation to the particular conditions of the group in question presented in a clear and effective way This is often, of course, difficult to provide for, but none the less a necessity

If a systematic campaign of public meetings, public exhibitions and persistent circulation of selected literature be carried through in any except our very largest cities it will be found possible to reach practically every individual

It was said a moment ago that the effect of an exhibition is measured by the amount of publicity attending it This statement could also be made of all the methods which are employed or can be devised It is, therefore, of prime importance that the cooperation of the public press should be secured in all cases Fortunately this is seldom a difficult matter The newspapers will print whatever the public demands, and with the interest in tuberculosis which is now manifesting itself in every center the difficulty is not to procure publication of prepared articles, but to prepare articles of a suitable character

An experiment tried this last year by the New York committee of sending regularly each week to a long list of newspapers throughout the state a short article on tuberculosis and its prevention has proven unexpectedly successful A large number of these papers have welcomed the contribution and have joined in the campaign with encouraging enthusiasm There is no reason except that of expense why this plan should not be extended until it includes all the cities of the Union

Every now and then a novel method of reaching the public is discovered in some one community and becomes available for others

A little over a year ago in Yonkers, where a most intelligent and resourceful campaign has been carried on for the last two years the committee in charge hit on the plan of an open-air stereopticon exhibition Slides were prepared which contained pithy sentences regarding tuberculosis, its infectious character, methods of prevention, pointed advice, etc During the summer months, in an open-air square in the city, evening exhibitions were regularly held and crowds of people gathered and were not only entertained but instructed by the views thrown on a wall adapted to the purpose Views and scenes of general interest are shown and interspersed between the tuberculosis slides

The idea was taken up by the New York Board of Health, and last summer it was employed with great success in some of the smaller public parks in the crowded quarters of the city The dwellers in the tenements gathered by thousands, and while interested and amused, were at the same time given wholesome information and instruction

This same resourceful committee of Yonkers has also obtained permission to place notices on all the telegraph and telephone poles in the city, a plan which could probably be followed in many of our communities A full report of the methods employed in that city was presented at the last meeting of the National Association for the Study and Prevention of Tuberculosis and will soon appear in type

Another admirable device is that employed by the New York committee through the courtesy of one of the largest commercial houses in the city which owns the advertising rights on the backs of street car transfers On certain days this firm has allowed the committee the space, and on the backs of all transfers issued on that day appears a statement regarding tuberculosis and its prevention

Since the object of the campaign is publicity, concentration of effort is often desirable, and in one or two cities it has been found possible to gain the cooperation of practically all the churches of the community so that the subject of tuberculosis and its prevention can be presented to the congregations on a given Sunday This requires some preliminary negotiations, but where it can be carried out insures not only an immense audience but still greater publicity through the press reports which will invariably be given on the following Monday

A short time ago in Providence, R I, a meeting was called which may possibly be more fruitful in its effects than any other attempt thus far made Through the energy of one or two individuals deeply interested in the crusade representatives of a large number of manufacturing companies met and formally discussed what the employer could do to prevent tuberculosis among his employes While it is too soon to forecast the results of this meeting yet as a symptom of awakening responsibility its importance can not be overestimated We recognize that it is in the home and shops where the bulk of our people live and work that tuberculosis has its stronghold, and if we can gain in this crusade an intelligent cooperation of labor and capital an enormous advance will have been made

It is impossible to rehearse in detail the methods which have been found effective in this campaign of ours We are still in the experimental stage and each day realize more clearly the magnitude of the task which is presented

With the number of organizations now in existence and constantly being formed in all parts of the country, new lines of attack are being uncovered and new methods devised which are applicable to other centers than those in which they find their origin It is a far easier matter for a newly-formed society to take up its work promptly and efficiently to-day than it was three years ago and the program and method is becoming clearer daily

The National Association stands ready to cooperate with suggestion and aid to the extent of its ability and with the extension of system and organization the efficiency of the campaign can be counted on to advance with a rapidity equal to that of the interest and enthusiasm which is making the crusade against tuberculosis the most striking aspect of the present world-wide movement in the direction of preventive medicine

105 East Twenty second Street

PUBLIC PROVISION FOR ADVANCED CASES OF TUBERCULOSIS *

EDWARD O OTIS, M D
Visiting Physician at the Massachusetts State Sanatorium
BOSTON

From the activity now manifested in this country by state and municipal authorities and by private philanthropy it seems assured that in the near future the incipient cases of pulmonary tuberculosis will be measurably well provided for Sanatoria for such cases are now springing up in the various states with increasing rapidity, and one can prophesy with considerable assurance from what has already been accomplished that in no distant future the majority of the states will have one or more sanatoria for incipient cases

The outlook is not so hopeful, however, with regard to the advanced, the hopeless cases Provision for them is sadly lacking, and yet they are the most numerous, and probably the most dangerous, to the community and to their immediate neighborhood

"It is admitted on all hands," says Phillip,[1] "that it is the advanced or dying cases of consumption which constitute the greatest source of infection to a community Among the poorer classes this is emphatically the case, where, it may be, one room is shared by half a dozen persons, one or more of whom may be afflicted with tuberculosis The segregation of such cases is a most important move in preventive medicine"

If the tuberculosis crusade is to go on, and it will, adequate accommodations must be provided by the public for the advanced cases, who can not be properly or safely cared for at their homes The dangerous consumptive must be isolated

The problem is too vast a one to be undertaken and satisfactorily solved by private or local effort The state and municipality (I refer more particularly to the large cities) must lend their aid and undertake the work, or at least initiate and finance the movement It will be, moreover, an economic step on the part of the public authority from the standpoint of prevention The state now recognizes as one of its legitimate functions the prevention of disease, not only for the welfare and protection of its people, but as an economic measure

The time is at hand, I believe, when, through efficient compulsory notification, all cases of tuberculosis existing in town or city will be made known to the health authorities, and the next logical step is to furnish such

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City, June 1907

[1] British Journal of Tuberculosis, i, p, 18

authorities adequate accommodations for the isolation of such cases of advanced tuberculosis as in their judgment, are a menace to the other members of the household and to the immediate community

This, I believe, must be accomplished by state or county consumptive hospitals, or, in the case of the larger cities, by municipal hospitals of the same nature, as New York, Boston and other cities have done As it is now such accommodations as are afforded by most cities and states—and these are very inadequate—are by the state or municipal almshouses It is an evident injustice to the poor but worthy consumptive that he should be subjected to the stigma of pauperism simply because he is unfortunate enough to be afflicted with this disease "Excluded from general hospitals, considered 'incurable' by most sanatoria, the advanced and dependent consumptive has practically no haven of refuge save the much dreaded workhouse infirmary"

State hospitals, in number according to the population, should be provided, and each community be assessed for a part or the whole of the maintenance of the consumptives received from its locality

It is obviously not so important to select the sites of such hospitals with regard to the most favorable climate and situation as in the case of sanatoria They should rather be located near the thickly-populated centers so that they may be easily accessible

Neither is it necessary to construct them on the elaborate plan of the sanatorium Simple one- or two-story wards, connected by a corridor with an administration building, would satisfactorily serve the purpose, for the principal object of such institutions is to isolate the consumptive and make him comfortable

Of course some of the advanced cases will show such improvement that they can properly be given the regular open-air treatment, which can be done by either transferring them to the sanatorium or at the hospital by means of tents shacks or piazzas, or one of the wards can be reserved for this purpose On the other hand cases in the sanatorium which go badly and become advanced and hopeless can be transferred to the hospitals, and thus one institution will supplement the other very much as is done by the great Brompton Hospital in London and its sanatorium at Frimley

Large cities would naturally require one or more consumptive hospitals of their own, and the city purse is able to establish and maintain them Boston has recently appropriated $150,000 for such an institution and it is already under way [2] New York has done the same thing, and some other cities, I believe

It has been urged that this problem of the care and isolation of advanced cases can be solved by adding or appropriating wards of already existing hospital plants, particularly as so many cottage hospitals have now been established throughout the country Even if this could be done in every case such provision would still be very inadequate to meet the requirements of the state at large the smaller communities where no general hospital existed, the manufacturing towns, etc And no state I am sure is so impecunious as to be unable to establish one or more consumptive hospitals of the inexpensive kind I have referred to, when it is borne in mind that the expenditure will eventually be returned in the saving of life which has a money value to the state through the removal of sources of infection

The tuberculosis dispensary is now acknowledged to be an essential factor in the tuberculosis crusade, and should be in intimate relation with the consumptive hospital, on the one hand, as well as the sanatorium on the other The trustees of the consumptive hospital of the city of Boston have established such a dispensary in the heart of the city which will be open evenings as well as during the day The tuberculosis dispensary will, among other uses, serve as a clearing house from which tuberculous individuals can be directed to the proper institution or be supervised and treated at home through nurse and physician if they so desire, and can do so, in the judgment of the health authorities, without danger to the other members of the household

Eventually, I believe everybody will, either of their own free will or through compulsion, undergo an examination of the lungs, and, as at present, a certificate of vaccination is required of school children and of others before entering certain occupations or assuming certain positions, so will there be a similar requirement regarding tuberculosis And why should not this be so when one considers the prevalence of the disease and its communicability? For such examinations the municipal or public tuberculosis dispensary will naturally be the place just as the municipal vaccination depots exist for public vaccination As Phillip says [1] "The dispensary will constitute for every town or district the developmental center and uniting point of other agencies" It should keep a register of all tuberculosis institutions and activities sanatoria hospitals infirmaries private boarding-houses for the tuberculous in health resorts, parochial hospitals tuberculosis associations, etc, and a list of all known cases of tuberculosis in the city or district

In connection with state or municipal consumptive hospitals I would suggest maternity wards for tuberculous pregnant women where, before and after their confinement they can receive the hygienic and dietetic treatment a suggestion made by Dr Knopf with regard to maternity hospitals, but I think the plan could equally well be carried out in connection with the consumptive hospital Furthermore accommodations for tuberculous and scrofulous children might be afforded either in an annex to the consumptive hospital or sanatorium or in a separate institution, a branch of the consumptive work so well recognized and executed in France through the instrumentality of the various associations for the protection of infants and the care of tuberculous children

The "day camp," now an established feature of the tuberculosis work would find its proper place in the grounds of the consumptive hospital for the hospital being situated near a thickly-settled center could be easily reached by the day camp colony This has already been done in connection with the Boston Consumptive Hospital, which can be reached from the city by a five-cent fare

The legislature of Massachusetts at its session of 1906, appointed a commission "to investigate measures for the relief of consumption and sites for state hospitals for consumptives," and in their report to the present legislature the commission recommended the erection of three hospitals "which should be devoted principally to the treatment of cases in the advanced stages of the disease," and the creation of state medical inspectors "to assist both the medical profession and the laity in fighting consumption" It goes on to say

> A law should be enacted arbitrarily dividing the state, for purposes of medical inspection, into twelve or more districts, and providing for the appointment of a physician of consid

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[2] Since the above was written another considerable appropriation has been made for the completion of this object.

> erable learning and experience, a resident of the district, as state medical inspector It should be his duty to inform himself as to the prevalence of tuberculosis in the district, to devise ways and means of combating the disease, to disseminate knowledge as to the best methods of preventing its propagation, to make or cause to be made microscopic examinations of sputum, free of expense, to examine all persons in said district desiring to enter the state sanatorium at Rutland, or other tuberculosis hospitals which the state may erect, to keep a record of the dwelling place, occupation and physical condition of all persons in said district who have been inmates of such hospitals, from time to time to forward to each hospital for consumptives a report of the condition of the persons who have been treated in said hospital, and also to perform such other duties as may be imposed on him by the State Board of Health
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> These inspectors might be able to enlist the aid of philanthropic persons in establishing tuberculosis classes or day camps such as have been mentioned They should be able at least to interest employers within their districts so as to prevent any employé suffering with tuberculosis from imperiling the lives of his fellow workmen by spitting carelessly It is believed that if the attention of all the manufacturers is brought to the way in which the prevention and cure of tuberculosis among operatives is being carried out in Rhode Island and in a few places in this state, many others will be quite as ready to help those in their employ who are sufferers from the disease
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> The state medical inspectors, in performing their various duties, will need the assistance of visiting nurses, a work which young woman not otherwise occupied will perhaps volunteer to do without expense to the state, but, if volunteer nurses are not forthcoming, then the state should employ women of some experience, under the direction of the inspectors, to visit needy patients who for any reason can not be admitted to a state hospital Such work ought to be given to those who have recovered from the disease, because they will better understand the essential elements of the treatment
>
> These inspectors should keep in touch with the state institutions by frequent consultation with the trustees or superintendents They should be responsible, however, to the State Board of Health, and should make annual reports to that board, or more frequent reports if called on, and, if the office force of that department or its appropriation are insufficient to provide for their supervision, further legislation should be enacted, in order to cover this additional expense
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> The commission is strongly of the opinion that by means of state medical inspectors great good can be accomplished in the fight against tuberculosis

These recommendations have been favorably reported on by the committee of the legislature and a bill framed appropriating $25,000 for such inspectors and $300-000 for the three consumptive hospitals, and there is every reason to believe that these bills will be shortly passed by the present legislature[3] Thus Massachusetts will be the first state, so far as I am aware, to provide hospitals for advanced cases as she was the first to establish a state sanatorium

CONCLUSIONS

It is evident from the present agitation that the public is determined to control and eventually to eradicate tuberculosis, and we now possess sufficient knowledge of the disease and its prevention to intelligently work with this end in view An efficient and complete plan for public execution in the pursuance of this object would, in my judgment, be as follows

1 Compulsory registration and disinfection
2 Free examination of sputum
3 State or municipal law against promiscuous spitting
4 Sanatoria for incipient cases
5 Hospitals for advanced cases, with maternity wards for tuberculous pregnant women
6 Tuberculosis dispensaries
7 Farm colonies for those discharged from the sanatoria
8 Sanatoria or hospitals for tuberculous and scrofulous children, preferably situated on the sea shore, as France, England and other countries have done
9 Efficient school inspection by physician and nurse with special reference to tuberculosis
10 Factory and workshop inspection with the same purpose in view

The majority of these measures are already in operation in a number of cities and states None is more urgent or will contribute more to prevention than consumptive hospitals with sufficient accommodations for advanced or hopeless cases We must isolate the dangerous, hopeless consumptive, the community has a right to demand it and should take steps to enforce it

[THE SYMPOSIUM ON TUBERCULOSIS WILL BE COMPLETED NEXT WEEK BY THE PAPERS OF DRS BROWNING AND PAQUIN AND THE DISCUSSION]

GLYCOSURIA IN ITS SURGICAL RELATIONS [*]

ALBERT E HALSTEAD, M D

CHICAGO

In presenting this subject no attempt will be made to follow any classification of the different forms of glycosuria nor to distinguish by any close differentiation between glycosuria and its more advanced stage, generally termed diabetes This is done because at the present time the question of the etiology of diabetes is unsettled, and it is only by observing any individual case of glycosuria for some time that it is possible to determine to what class it will ultimately belong Another reason for not separating these cases by sharp differentiation into the groups commonly given by the internist is that to the surgeon the mere presence of sugar in the urine is of considerable importance from a standpoint of prognosis

My object will be to show what causal relation exists between traumatism and certain surgical diseases, and the presence of sugar in the urine and to point out what influence this type of glycosuria has on the progress of the injury or disease that has called it into existence I will also consider the effect of operative procedures on the course of diabetes, particularly the effects of anesthesia on diabetics, and to what extent an existing glycosuria should modify the treatment of surgical cases Lastly, I will deal briefly with surgical complications depending on a well-established diabetes

TRAUMATIC GLYCOSURIA

In 1859 LeCoq called attention to the frequency with which head injuries are followed by sugar in the urine Since that time many cases have been reported by other observers, among whom may be mentioned Recklinghausen, Fischer, Seegen and Redard The latter in 1885, presented a paper before the French Surgical Congress, in which he reported twenty-eight cases of traumatism of various kinds and surgical affections that were considered to be the exciting cause of glycosuria In his report he cites not alone head injuries, but fractures and various other traumatisms that were followed by what he termed an ephemeral glycosuria This lasted from one to eight days, as a rule, and was not associated with the other symptoms that are commonly found in diabetics

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[3] These bills have been passed by the legislature the inspectors have been appointed and trustees to erect the hospitals

[*] Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City June, 1907

In three of Redard's cases glycosuria followed simple fractures In one, a fracture of the radius, sugar was found immediately after the injury and persisted for five weeks In a second, 0 2 per cent of sugar was found after a fracture of the clavicle, but disappeared within one week Redard's paper caused considerable discussion, many regarded his cases as examples of intermittent glycosuria, the accident merely determining a relapse of an antecedent condition

Hadke, in order to determine the frequency of glycosuria after simple fractures, examined the urine in twenty-five cases In no case was a spontaneous glycosuria found, although in 60 per cent an alimentary glycosuria from one day to one week could be demonstrated

In 1894 Kausch reported eleven cases of glycosuria following trauma Of these, 9 were simple fractures and 2 contusions of the soft parts without fracture In all, glycosuria immediately followed the injury The amount of sugar excreted in each case was below 1 per cent, and in none were there any other evidences of diabetes The duration of the glycosuria was less than eight days, except in one case In this it reappeared after the administration of an anesthetic on the tenth day but subsequently the urine was found free from sugar Kausch also found by studying his cases that the tolerance of those suffering from ephemeral traumatic glycosuria for carbohydrates rapidly increased from day to day until generally within a week it reached its normal point

I have examined during the last three years fifty cases of fractures of various kinds to determine the status of sugar metabolism after injury Of these, 44 were simple fracture without any other injury than the contusion of the soft parts commonly found in these cases, six were fractures of the vertebra, one complicated by a compound fracture of the femur, and one by crushing injury of the foot demanding amputation

Of the forty-four simple fractures other than fractures of the vertebra there were

Pott's fracture	10	Fracture of shaft of humerus	3
Fracture of radius	5	Fracture of both bones of leg	4
Fracture of both bones of arm	4	Multiple fracture of scapula	1
Fracture of clavicle	12	Fracture of the pelvis	1
Fracture of shaft of femur	4		

In six of these forty-four simple fractures sugar was found in the urine In all cases the urine was examined within twenty-four hours after the accident, in most of them within a few hours Daily examinations of the urine were made up to the fourteenth day after the injury was received Sugar was found on the first day in four, fracture of the pelvis, fracture of the clavicle, fracture of both bones of the leg and fracture of the shaft of the femur On the second day in one, fracture of both bones of the leg, on the fifth day in a case of fracture of the scapula with severe contusions of the back and head In none of these could any history pointing to a previously existing glycosuria be elicited The quantity of sugar excreted varied from 0 2 to 1 per cent In five the urine was free from sugar at the end of the second week In one it was present on the sixteenth day after the injury Later examination could not be made as the patient left the hospital In all the presence of the glycosuria was the only evidence of a disturbed sugar metabolism In none did its existence exert any influence on the healing of the fracture Of the six cases of fracture of the vertebra one, a fracture of the fifth cervical, died on the second day, a second, a fracture of the lower dorsal with a crushing injury of the foot, died on the third day In both of these cases sugar was found immediately after the injury In one of the four remaining cases (that complicated by a compound fracture of the femur) there developed a glycosuria which continued until the death of the patient on the twelfth day after the injury No sugar was found in the urine of the remaining three patients, all of whom lived longer than two weeks

The chief significance of these observations lies in the light thrown on the etiology of traumatic glycosuria To me they point to shock, particularly concussion of the cerebrospinal axis, as the principal etiologic factor The relatively large percentage of cases, although the number is small in which sugar was found in injuries of the vertebral column and in the more severe injuries associated with fractures of other bones, confirms this view Kausch believes that, in addition to the mechanical concussion of the body, the psychic effect of trauma plays an important rôle He believes that mental shock may determine a glycosuria in the absence of any bodily injury

Outside of the possible indication of injury to the central nervous system the presence of glycosuria should be considered as to its influence on the healing of fractures, and to the possible course of treatment pursued in dealing with injuries requiring operative procedures From my experience and that of others who have reported cases of glycosuria resulting from trauma, I would say that ephemeral glycosuria does not influence in any way the union of fractures Neither should it constitute a contraindication to any operative treatment that may be deemed imperative Nevertheless, I should postpone any operation that is not imperative until the sugar has disappeared from the urine It is possible by the additional shock of an operation, or by the influence of a general anesthetic, to convert a mild transitory or ephemeral glycosuria into a more severe type Again, when the glycosuria becomes well established the possibility of having a non-union is greatly increased It is well known that fractures occurring in diabetics sometimes result in delayed or imperfect union Bellingham Smith cites five cases of simple fractures, three of which united after from three to five months, and two remained unhealed

TOXIC GLYCOSURIA

It is well known that a glycosuria, usually ephemeral in character, frequently follows the administration of certain drugs With the exception of that following chloroform or adrenalin, these are of little interest to the surgeon We also recognize as toxic glycosuria that type which results from the absorption into the circulation of the poisonous products of bacterial invasion of living tissue or that results from the decomposition of dead tissue from infection with the saprophytes Glycosuria mostly follows infection with the ordinary pus micro-organisms Here we find it in carbuncle, phlegmon and gangrene, representing generally mixed infections, and in erysipelas, when we have an infection with the streptococcus alone We also find it in ulceration, particularly in foul ulcerating surfaces, where the saprophytes are also present

The importance of recognizing the possibility of a secondary glycosuria from infection presenting these clinical characteristics is evident when we recall that these same varieties of infection frequently are found in diabetics, their existence depending on the changes in the tissues due indirectly to the presence of sugar in the blood These transitory glycosurias which result from infection are to be distinguished from the glycosuria antedating these conditions, and which may be the cause of the infection, by its mild character, and generally ephemeral existence We also note in these cases a relation between the amount of sugar found in the urine from day to day and the intensity of the infection The percentage of sugar generally increases immediately after a fresh invasion of tissue, as shown by a rise of temperature We also find that as soon as the infection begins to subside, or immediately after free drainage is instituted, the sugar disappears from the urine In secondary glycosuria none of the other symptoms of diabetes are in evidence In a few cases polyuria has been reported Generally we find that any marked increase in the quantity of urine is of but short duration Polyphagia, thirst etc, are not common The significance of a secondary toxic glycosuria, in surgical infectious diseases, rests on the question of its influence on the progress of these diseases In Redard s report he found that in fourteen cases of toxic glycosuria albuminuria was also present He regarded this as warranting a guarded prognosis in every case, and considered the presence of albumin of greater importance than the defect in sugar metabolism As regards the effect on the progress of carbuncle and phlegmon, from the cases reported it would seem as if the presence of a transitory glycosuria did not greatly affect the prognosis in these cases Bellingham Smith cites eleven cases, all of which recovered

I believe that in all the cases in which there exists a transitory secondary glycosuria we should endeavor to free the urine from sugar as rapidly as possible by instituting proper surgical treatment and by due attention to the diet All major surgical operations should, in my judgment, be postponed, if possible, until this is accomplished The presence of sugar, however, should not constitute a contraindication but rather an imperative indication for carrying out minor surgical procedures, such as incision and drainage of abscesses and abscission of gangrenous tissue These operations should be done under local anesthesia In long-continued suppuration the possibility of a secondary glycosuria becoming permanent must ever be kept in mind

In erysipelas the presence of sugar in the urine must always be regarded as of serious prognostic moment The mere existence of a glycosuria is not of itself the cause of the high mortality, but it indicates a severe type of infection The quantity of sugar generally bears a direct relation to the severity of the infection With a large surface involved and a correspondingly high temperature the sugar may reach as high as 6 to 7 per cent Permanent glycosuria has followed erysipelas

In Redard's report a number of cases are mentioned in which glycosuria supervened on the development of rapidly-growing neoplasms This occurred in those in which sloughing and ulceration were present, and probably was the result of the toxemia from infection rather than that due to the growth of the tumor

OPERATIONS IN DIABETES

In dealing with this phase of the subject I will consider, first, those operations that are imperative such as operations for intestinal obstruction or traumatic cases demanding immediate relief In such cases the added dangers incident to the complicating diabetes must be taken into consideration, yet be risked The only conditions that the diabetic complications impose on the surgeon are that he should reduce the surgical interference in every case to a minimum and select, where a choice is admissible that operation that may be completed in the shortest time and that which will insure the least risk of infection

As example, in acute appendicitis, in a diabetic everything considered, an early operation will entail the least risk to the patient, because it can be done more expeditiously in the early stage of the disease and with a minimum risk of infection On the other hand, if, as a consequence of the diabetes, we treat the case expectantly, the risk of an unfavorable termination is greatly increased by the added danger of abscess or general infection of the peritoneum which, in turn are strong predisposing factors in exciting a fatal diabetic coma

In determining the propriety of an operation that is not at the time imperative but that will ultimately be required we must take into consideration the age of the patient, the stage of the disease the toxic ingredients of the urine and the quantity of sugar eliminated A marked degree of cachexia, as well as a coincident chronic alcoholism, will also influence one in determining the time of an operation

As regards the age the younger the patient the greater the risk of a diabetic coma supervening on any operation, particularly if a general anesthetic is employed As a general rule, patients suffering from diabetes and a concomitant surgical lesion are past middle age In these, particularly if the glycosuria has existed for some time arterial sclerosis and trophic nerve degeneration resulting from the excess of sugar in the blood determines a lowered resistance of the tissues which may result in infection or delayed healing of operation wounds While these conditions do not obtain in the young diabetics, yet the danger of an acid intoxication terminating in coma resulting from the shock of an operation is very great and should always be given the most careful consideration

In deciding the question of operation, the amount of sugar in the urine and the effect of medical treatment as influencing the quantity excreted is taken by many as the best guide in determining the expediency of an operation

Tuffier is emphatic in pronouncing against operative procedures if, after a fair trial, medical treatment has not caused the sugar to disappear or to be materially decreased This opinion is not shared by all Many take the extreme view of not considering the quantity of sugar at all in determining on the operative treatment of any surgical case The consensus of opinions, as gathered from a review of the literature, may be stated as follows If the surgical lesion is such that it will permit of delay sufficient to allow of a thorough course in dieting and medical treatment, this should always be carried out If the sugar disappears or diminishes quickly and the other toxic substances common in the urine of diabetes diminish correspondingly, any operation not entailing an unusual degree of shock may be attempted with confidence in the belief of favorable outcome It must be remembered, however, that the disappearance of sugar from the urine even for a considerable time will not always be a guarantee against coma following a surgical operation

In a case cited by Smith and Durham coma supervened on an operation in a patient whose urine had been free from sugar for two years In every case the presence of acetone and oxybutyric acid and ammonia, even in the absence of sugar, should be regarded as of far greater prognostic significance than any amount of sugar. When these substances are found any operation would best be postponed until by proper medical treatment they may be eliminated or reduced to a harmless quantity. Phillips believes that any considerable increase over the normal in the excretion of ammonia forebodes coma after an operation.

My conclusion concerning this question is, therefore, that we can not always rely implicitly on the quantity of sugar excreted as constituting a guide in determining the safety of any operation in diabetes. Yet I believe that a high percentage of sugar should call for a thorough course of treatment before any operation of magnitude that may be postponed is attempted. The disappearance of the sugar from the urine, if there remain other substances, the result of the disturbance of sugar metabolism, such as acetone, diacetic acid, excess of ammonia, etc., should not be permitted to lull us into a sense of security. These latter substances indicate a far greater danger from coma than does the presence of any quantity of sugar alone. An absence of these last named toxic substances, with a decreasing quantity of sugar, under medical treatment permits us to operate on diabetics providing we eliminate the possibilities of infection without any serious risk that can be charged up to the existing glycosuria.

It should be mentioned in passing that some observers consider the condition of the reflexes particularly the patellar reflex, as of great value in determining the advisability of operating on diabetics. Bouchard first directed attention to this point. He reported sixty cases, in 29 per cent. of which the patellar reflex was absent. Of these 31.5 per cent. died, while in the remaining cases where the reflex was retained only 4.5 per cent. succumbed. Regnier also considers that the condition of the reflexes favors a bad prognosis and strongly advises against any surgical interference in these cases. It may be said of this that diminution of the activity of the reflexes or their loss generally bears a direct relation to the quantity of sugar excreted, and, therefore, indicates an advancing stage of the disease and thus unfavorably influences the prognosis. That the absence of the reflexes in any individual case without relation to other symptoms should constitute a contraindication to the operative treatment of any surgical lesion occurring in a diabetic does not seem to be proved by the cases reported.

COMPLICATIONS: DELAYED HEALING AND INFECTION.

The question that first arises after operations on diabetics is what influence the disturbed sugar metabolism will have on the healing of the wound. As a result of the presence of an excess of sugar in the blood, as the disease progresses there is a constantly increasing arterial sclerosis, which, if continued, will ultimately terminate in an obliterating process, principally confined to the smaller arteries. Secondary to this arterial change we find nerve degeneration affecting the trophic nerves. This degeneration is due to the disease of the artery supplying the nerve. From these two elements, defective blood supply and disturbance of nutrition through degeneration of the trophic nerves, there results a lowered activity in the process of repair. A third cause of defective nutrition is thrombosis of the larger arteries or veins, which is a common sequence to the changes mentioned above.

These various changes in the blood vessels are most marked in the lower extremities and thus account for the frequency of gangrene in lower, and its rarity in upper extremities. In long-standing cases of diabetes, particularly in alcoholics, the condition of the arteries of the lower extremity should always be ascertained before any operation is attempted. If the circulation in the principal vessels is absent or markedly deficient, no operation below the point where active pulsation ceases should be considered. Another factor in determining a delay in healing of wounds in diabetics is the added risk of infection, which is directly due to the presence of sugar in the tissues and indirectly to the defective circulation. The experiments of Nicholas, Kalinski and Ferron have shown conclusively that the presence of sugar up to a certain quantity in the tissues greatly increases the pus-producing qualities, while it diminishes the virulence of most of the micro-organisms found in infected wounds.

This influence on the growth of pus-forming micro-organisms should always be considered in determining the advisability of operation, from the nature of which an aseptic course can not be expected. Elective operation on the rectum, about the genital organs, and in the aural or nasal cavities should be avoided, when possible, in *advanced diabetes*. In suppurations occurring in these regions prompt surgical interference is demanded because of the rapid spread of infections.

Concerning the question of healing of operation wounds in diabetics it may, therefore, be stated that every wound, when aseptic conditions are maintained, will heal promptly in diabetics excepting in the lower extremities. In wounds not of these locations that become infected the dangers incident to infection, of which delay in healing is one, are all greatly enhanced by the presence of an excess of sugar in the blood. Operations that can be avoided should not be considered.

By many surgeons the danger of hemorrhage, either at the time or after the operation, is considered a contraindication to operative procedure on diabetics. From a review of the literature and from my own experience in operating in diabetes I should say that, excepting as far as the additional risk of suppuration increases the risk of a secondary hemorrhage, that this danger does not exist. In order to forestall the expected hemorrhage in many of the cases reported the cautery was employed as a hemostat at the time of the operation. This undoubtedly accounts for the frequency of secondary hemorrhages.

Effects of operations on the glycosuric condition are evidenced in many cases by an increase in the quantity of sugar eliminated, and in a few by the onset of coma resulting from an overwhelming increase in the blood of toxic products that result from the disturbed sugar metabolism. In many cases in which, for some time previous to the operation sugar had been absent from the urine, and no other evidences of diabetes were present, after an operation or an injury sugar reappeared in far greater quantities than before.

Redard reports one case in which trauma aggravated an existing glycosuria. The sugar increased from 10 to 25.2 gr. per one thousand liters, and then diminished again after fifteen days to 12 gr. Coincident with the increase in the sugar there may develop an acetonuria in subjects of glycosuria in whom previous to the operation or trauma the urine had been free from acetone, β-oxybutyric acid, etc. This is more likely to occur in young individuals and in extremely septic cases. In the latter cases the coma is probably frequently more the result of septic intoxication than of the acid intoxication.

In order that we may avoid the dangers of coma following surgical operations too much stress can not be placed on the necessity of thoroughly preparing patients by instituting a rigid course of medical treatment as a preliminary measure in all surgical operations In addition to the enforcement of a strict diet, the administration of large and frequently repeated doses of soda bicarbonate should be employed to neutralize the acid products of incomplete metabolism that are the cause of coma

As previously stated, it is only after disappearance of these acid bodies and ammonia from the urine that we are justified in attempting any but the most urgent operations

In addition to the administration of soda by mouth in *extreme cases, it may be given subcutaneously* or intravenously Kausch and Schwartz also recommend the use of glykon acid in doses of 70 grs, in one-half liter of water, neutralized by soda bicarbonate If coma develops, the free use of soda (150 grs in twenty-four hours) offers about the only hope of saving the patient The probability, however, of recovery after coma has once developed is remote Our treatment should be more directly prophylactic

ANESTHETICS IN DIABETES

The use of inhalation narcosis is generally to be avoided, if possible, in diabetes Therefore, for diagnostic purposes, and in minor operations they must not be employed under any circumstances when there is a well-established glycosuria In cases in which no other means of producing analgesia will fulfill the indications of the case we must select the one least harmful Experimentally and in clinical cases it has been proved without any question that ether should be the anesthetic of choice It has been demonstrated by the observations of Abrams and others that in non-diabetics postoperative acetonuria of some degree develops in about 66 per cent of the cases when chloroform is employed This is the result of an intense parenchymatous degeneration, involving especially the liver This being true in the non-diabetic, healthy person, it must follow that it is most dangerous in diabetic subjects, and its use under all circumstances should be condemned

Frequent narcoses following each other at short intervals should never be permitted even where a minimum quantity of sugar is found in the urine The quantity of anesthetic of any kind, as well as the duration of the narcosis influences the prognosis in surgical operations in diabetics and should be reduced to a minimum

Narcosis from nitrous oxid gas has recently been extolled as harmless in these cases This anesthetic is not free from danger, as experience has shown that a persistent glycosuria may develop in a previously healthy individual after the prolonged use of nitrous oxid

Whenever it is possible some of the generally accepted methods of producing local or regional anesthesia should be chosen As the greatest danger in the use of general anesthetics is from postoperative coma a preliminary treatment with bicarbonate of soda, as heretofore indicated, should be instituted in every case where it is possible Kausch lays stress on the advantage obtained in operating on diabetics after a minimum period of starvation The nutrition after the operation should also receive attention as should the use of bicarbonate of soda administered in sufficient quantities to maintain an alkaline urine

GANGRENE IN DIABETES

As a result of a lowering of the resistance of the tissues against infection by the presence of an excess of sugar in the fluids of the body and from diminished blood supply depending on changes in the blood vessels, gangrenous processes frequently result from diabetes That arterial sclerosis and obliterating endarteritis are important etiologic factors in the development of gangrene of the extremities has been shown by Senator Israel Koenig Winniwarter and Heidenhain The chief vascular change found in limbs amputated for diabetic gangrene is arteriosclerosis This is found not only in the terminal divisions, but in the main trunks of the arteries Endarteritis obliterans of the small terminal branches has also been found frequently by Heidenhain and Gussenbauer in both gangrene and perforating ulcer in diabetes

Thrombosis, generally secondary to arterial sclerosis, at the points of division of the main arterial trunks has been noted in many cases by Kuster and others Thrombosis of the veins although common plays a secondary rôle in determining the onset of a gangrenous process Besides, the effect on the nutrition of tissues from the arterial changes, direct, we have also in long-standing diabetes a trophic nerve disturbance resulting from a similar change in the vessels supplying the nerve trunks The influence of this trophic nerve lesion in the form of a parenchymatous neuritis was first pointed out by Ebstein

Gangrene occurring in the upper extremities, and the surface ulceration and gangrene of the trunk can not be attributed to the vascular changes mentioned above In these the lowered resistance of the tissues and the accidental traumas and consequent infection play the most important etiologic rôle

Age also has a bearing on the development of gangrene in diabetes In the great majority of cases this complication occurs in persons past 50 The advanced age favors arterial sclerosis, which in turn is the principal cause of defective blood supply of the extremities Etiologically there is a close resemblance between the gangrene of diabetes and that due to senile changes in the blood vessels Although the anatomic changes are practically identical in each, clinically the course varies greatly In that occurring in diabetes the facility with which the tissues become infected and the rapid and fatal course of such infections call for a more guarded prognosis and more prompt and energetic surgical interference

In the treatment of gangrene of diabetes it goes without saying that the prophylaxis is of vast importance In all cases when diabetes is recognized particularly in persons beyond middle age, warning against the possible serious outcome of slight abrasions and infections should be impressed on the patient Corns warts and calluses *of the lower extremities should receive the most careful* attention and be treated only under the most rigid antiseptic conditions In one-half of a series of sixty cases of gangrene reviewed by Bellingham Smith gangrene started from some insignificant lesion, such as a corn or an abrasion of the skin of the foot

Impending ischemia, evidenced by loss of *muscular* power pain, cramps coldness of the surface, *and loss* of pulsation in the terminal arteries of the extremities, calls for rest with administration of remedies that will improve the circulation to the part Abrasions and cutaneous lesions of the extremities should be protected from the danger of an accidental infection by a dry antiseptic dressing

When gangrene of the lower extremities has developed the question when and where to amputate is one of great importance Generally speaking, local interference in the way of cutting operations on the sloughing tissues is to be avoided The necrosed part should be kept dry and free from infection if possible In cases where the gangrene is of the moist variety the infection may be limited by hardening the sloughing tissue by the use of alcohol or formalin dressings applied so as not to further impair the vitality of the adjacent parts

When the gangrene is limited to one or two of the toes and the circulation in the posterior tibial and dorsal pedis is unimpaired, amputation of the gangrenous toes alone is indicated If pulsation in the dorsal pedis is absent and that in posterior tibial remains full, amputation below the knee may be considered When the gangrene has reached the dorsum of the foot, amputation above the knee should always be advised In these cases obstruction of the popliteal at its bifurcation will in a large percentage of the cases be found and will constitute an imperative indication for a thigh amputation

Kuster's experience points to the importance of high amputation in diabetic gangrene Of thirteen cases of amputation below the knee, two of the wounds healed after sloughing of the flap, two patients died after gangrene of the stump had developed, and in nine a second amputation had to be performed Of seventeen patients in which an amputation above the knee was the primary operation eight died, but without extension of the gangrene, three wounds healed by primary union, three with slight marginal necrosis of flap and three after reamputation for gangrene of the flaps In my experience necrosis of the flaps even in thigh amputations, has invariably followed when thrombosis of the veins of the flap was found at the operation In these cases a higher amputation through tissue in which the vessels are not thrombosed must be made

In amputations of the lower extremities in diabetics a general anesthetic is unnecessary in most cases and should not be administered Analgesia by means of spinal cocainization is the method that in my experience insures the least risk to the patient. In the exceptional cases in which unconsciousness is to be desired ether should be the anesthetic of choice Conservation of the vitality of the tissues is to be attained by rapid operating, with the minimum amount of handling of the tissues and the avoidance, if possible, of circular elastic constriction of the limb Following amputation, as after every operation, the glycosuric condition should be treated by generally accepted methods, including the most rigid regulation of the diet

DISCUSSION

Dr. Henry S Stark, New York, pointed out that all writers on the surgical aspect of diabetes are a unit in advocating that the main features are to avoid shock and hemorrhage and to prevent coma, but they do not say how to prevent the coma. Surgeons are told to be as expeditious as possible and to avail themselves of every advantage which is to be derived from surgical asepsis, make an incision as small as possible, and operate early in the day, when the patient's constitutional condition is at its best, and to avoid pressure as much as possible, because in diabetics nerve degeneration is apt to ensue But he asked are not all these factors just as applicable in the case of patients who are not diabetics? In all cases it is just as necessary to avoid shock, hemorrhage and coma, so that there are at present no definite data on which the surgeon can act For example, when the system is below par as the result of a chronic nephritis, or from a chronic inflammation or disease of the liver, surgeons ought to bear in mind all of these points, just as they do when operating on a diabetic. Some authors state that if the excretion of urea per day reaches a certain amount, 3 grams, or that if the blood shows a condition of hyperglycemia, then there is an added danger in operating on a diabetic But, unfortunately, not many surgeons are able to make the physiologic tests to determine the presence of a hyperglycemia It is also stated that in case there is a large output of acetone bodies, in other words, when the patient is in a condition of acid toxemia, there is additional danger in operating on such patients But, again, no definite data are given by which one can determine these things and also overcome the excessive excretion of acetone bodies Besides, an acidosis is a not infrequent accompaniment of other diseases than diabetes Dr Stark said that it is deplorable that physiologic chemists have failed to discover any methods available for the general practitioner to determine the acidity of the urine, and he ventured to say that very few surgeons ever make any tests to determine the quantitative alkalinity of the urine so that many of these points are still in the theoretical stage One point Dr Stark mentioned that was not emphasized by the author was the question of gangrene Is there, he asked, such a distinct pathologic entity as ‘diabetic gangrene?” He thought not Pathologists say that the gangrene so common in diabetics merely follows an arterial sclerosis which in itself produces an obliterating endarteritis, and latterly a gangrene which is prone to microbic infection, as are all lesions in diabetes In a paper read before one of the sections, the author claims that there is no distinction pathologically between diabetic gangrene and the gangrene of Raynaud's disease and erythromelalgia Regarding the glycosuria, many patients excrete much sugar and yet their general condition is good Many patients excrete small quantities of sugar and their general condition is very bad Therefore, it is impossible to determine the patient's condition by the mere estimation of the amount of sugar excreted Many say that operation ought to be deferred until the system can be freed from sugar That is not true in every case Dr Stark thought that surgeons ought to divide operations on diabetics into two classes Those done for lesions directly due to the diabetes, such as gangrene, and carbunculosis, and those done for lesions not due to the diabetes

Dr A J Ochsner, Chicago, believed it is wrong to allow the statement to pass as the opinion of the Section that there is no difference between gangrene due to diabetes and that due to endarteritis or any other cause Although pathologically there is no difference, there is a very decided and definite difference clinically The difference is this: If in diabetic gangrene one disposes of the diabetes, the tendency of the gangrene to spread subsides at once On the other hand, if one does not dispose of the diabetes, there is a progression of the gangrene In something over 30,000 operative surgical cases that have come under his observation clinically Dr Ochsner has encountered relatively a large number of cases of diabetes, so that he was speaking from practical observation In making these observations he had an abundance of opportunity to demonstrate this clinical fact that in gangrene which is due to old age although there is some possibility of changing this tendency by hygienic and dietetic measures, there is not the possibility that there is in gangrene which is due to diabetes He has now under observation a case that fourteen years ago had diabetic gangrene By dietetic treatment the diabetes subsided, the gangrene healed and the patient is well, having lost but two toes

Dr Ochsner especially emphasized the point that we place these cases in the care of physicians who know how to treat diabetes because surgeons are accustomed to getting through with the patient, while the man who properly treats a diabetic patient treats him personally By placing the patient in the hands of one who prescribes a diet on which the patient can live with comfort indefinitely, the patient will be satisfied and will remain free from his diabetes, and there will not be a recurrence of the gangrene.

THE TREATMENT OF TRAUMATIC RUPTURE OF THE KIDNEY,

WITH REPORT OF TWO CASES OBSERVED WITHIN EIGHTEEN HOURS

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GENERAL CONSIDERATIONS

When Simon, in 1869, removed by lumbar incision the kidney of a woman who had a ureteral fistula opening on the abdominal wall above the pubes, he succeeded not only in proving clearly the erroneousness of Lawrence's contention, that "the kidney, fortunately, was beyond the reach of the surgeon," but also in demonstrating the vital fact that a single kidney is, in many instances at least, capable of performing the duties of itself and mate. Simon's researches created a surgery of the kidney.

Previous to 1878 traumatic rupture of the kidney was regarded of very rare occurrence, Maas could find only 71 cases recorded in the literature. To-day, owing to the advent of the many methods of rapid transit, combined with the increased number of dangerous occupations followed by mankind, the kidney is more frequently ruptured than in former years. Ninety-four per cent. of the patients are males. During childhood we find that the proportion of males drops to 80 per cent., with a corresponding rise in the number of females to 20 per cent. Females are the less exposed owing to their mode of life and dress and by anatomic differences.

The kidney may be ruptured by either a direct or an indirect blow. Campbell cites a very interesting and instructive case in which the lesion was due to a girl 14 years of age, doubling up her body forcibly to the left in jumping a hedge. She immediately experienced severe pain with collapse and the passage of bloody urine.

The pathologic findings are variable, ranging from a more or less extensive bruise of the kidney without any distinct tear of the capsule or solution of the kidney reaching the surface to a pulpification of the organ. In Rutherford's remarkable case, operation showed the kidney fractured across and separated from the ureter and blood vessels. Herzog has found that in falls and blows on the lumbar region the hilus of the kidney is usually torn and that retroperitoneal hemorrhage occurs.

In crushing trauma from in front, the kidney is torn anteriorly and crushed, hemorrhage takes place usually into the general peritoneal cavity. Intraperitoneal rupture of the kidney occurs more frequently in childhood than in adults because of the late development of perinephritic fat. Usually the rupture is transverse to the longitudinal axis of the kidney. This is due to anatomic causes. In Phelps' very instructive case the rupture occurred in the longitudinal diameter. Masius believes that the anuria following kidney injury can be explained by the fact that the vagus and splanchnic supply the renal vessels, irritation of the former causes contraction and hence suspension of excretion of urine. Interstitial nephritis in the opposite kidney may follow kidney rupture.

The three principal dangers attendant on renal injury are hemorrhage, anuria and sepsis. In former years sepsis was responsible for a very large percentage of the fatal cases. Complete obstruction of the ureter causes an atrophy of the kidney, while partial obstruction favors the development of renal abscess, a pyo- or a hydro-nephrosis or a cystic kidney. In many of the cases of renal injury there is only partial obstruction of the ureter, hence the frequency of abscess. In one of Fenger's cases observed one year after the accident, there was a renal and a hepatic abscess, as well as a collection of pus both below and above the diaphragm.

SYMPTOMS

Hematuria is one of the most frequent symptoms. Charteris and others have cited cases of complete rupture of the kidney in which hematuria was absent. This was due to obstruction of ureter by means of bloodclot. Newman attended a patient in whom the hematuria following a blow on the abdomen was due to papilloma of the bladder. Neither the persistency of the hematuria nor its severity are reliable criteria of the severity of the lesion. A clot of blood plugging the ureter may be associated with an alarming extra-peritoneal hemorrhage. McPheeters cites a case in point.

Pain of a severe and radiating character is almost always present. In some cases it is referred to the testicle, the latter may be swollen and very tender to palpation. The pain may at first be so slight that the patient refuses medical attention, later it may be excruciating in character. The mere passage of a clot of blood from the kidney into the bladder oftentimes induces great pain.

Prolonged shock is indicative of either peritoneal soiling or, especially if of increasing severity, severe peritoneal hemorrhage. The patient may partially recover from the primary shock, then be seized with excruciating abdominal pain and increasing pallor. This secondary shock is almost invariably indicative of severe peritoneal soiling.

A tumor is not always present, at times it will be overlooked. Its detection is of great import. The temperature may be subnormal. Usually it ranges between 100 F. and 103 F. The pulse is, at times, very misleading. It may be very slow. Dodge pins considerable faith to rigidity of the muscles of the back and flank. He regards them as characteristic of renal rupture.

DIAGNOSIS

The difficulty of diagnosis lies in those cases in which hematuria is absent or delayed and in those complicated with injuries to other viscera. Even in the apparently difficult cases a careful study of the history of the accident and of the clinical picture as a whole will enable the medical attendant to recognize those cases in which surgical treatment is urgently called for. The character of the injury, the site of impact, the severity and persistency of the collapse, the expression, the character and severity of the pain, the rigidity, the palpable mass, the hemorrhage and the picture in general will almost invariably guide correctly. In every abdominal injury or fall from a height the patient's urine should be examined. This is especially true where the patient sustains a fracture of the lower ribs.

PROGNOSIS

The prognosis depends materially on the character and severity of the injury and the time and character of the treatment. Many patients recover without the true nature of the lesion having been suspected. In the graver cases the patient succumbs to hemorrhage or sepsis unless operated on. When the injured kidney is the only one possessed by the patient the prognosis is gracliarity of the cicatrices led Klotz to remark that the case bore a deceptive resemblance to lupus vulgaris Lustgarten describes the lesion of the eye as a conjunctivitis, which Jadassohn believes could have been a mere coincident, as in the case of hypopyon, and inflammation of the lids observed in Abraham's case of lupus erythematosus involving the hand and face

CLINICAL REPORT

CASE 1—*History*—Mr C P, watchmaker, aged 66 years, married, presented himself for examination March 22, 1904 He was born in Switzerland, served in the army and field, has always been robust and well his family history was excellent He came to America and married in this country at an early age, and had never had any venereal disease, his wife, aged 64, is robust and well, and the only children born to them, two married daughters, were in excellent health His present ailment dates back eight to nine years, and began on the chin and nose in the form of two small red patches, and spread thence perceptibly to the left and right cheeks

Examination—Physical examination and inspection showed the patient to be in excellent health, and bearing no evidence of any associated or previous form of ailment The entire right cheek, nose chin, and a broad area entirely encircling the right eye, extending well over the lower half of the right forehead, was the seat of an active area of inflammation, with a sharp, circumscribed, well defined, slightly but superficially infiltrated border somewhat elevated above the surrounding normal skin and the fading central portion of the lesion (Fig 1) The slightly elevated border sloped gradually towards the fading center, which in areas was smooth, white, glistening in appearance, and free from hair, scales and inflammatory products The remainder was covered with adherent scales, whose under surface on removal was studded with numerous slender, sharp pointed plugs with a distribution corresponding to their insertion into the patulous orifices of ducts and hair follicles The border was covered with yellowish red and grayish black greasy concretions soft and edematous to pressure, somewhat painful and prone to hemorrhage on removal The inflamed area was studded with many comedo like bodies The left cheek was the seat of a smooth depressed atrophic looking cicatrix, evidence of former activity and presenting signs of recurring activity in the form of small circumscribed, freshly inflamed areas The hair of the mustache and beard had almost entirely disappeared with the exception of a small tuft on the chin The mucous membrane of the upper and lower lip, and the orifice of the nose was involved by the direct extension of the process and was reddened and inflamed, granular in appearance, and covered with bran like scales The mucous membrane of the right eye was congested in color, irregularly eroded, granular and edematous in appearance and markedly ectropic Both upper and lower lids of this eye and the lower lid of the left eye were the seats of active lesions The eyelashes had entirely disappeared from the right eye and nearly all the hairs from the right eyebrow

Treatment—From March 22 to June 11, 1904, patient was subjected to the Roentgen ray exposures, supplemented with topical applications of the following formula

℞	gm.		
Resorcin	10	0	ʒiii
Gum tragacanth	2	0	grs. xxxv
Glycerin	5	0	fl ʒiss
Distilled water	100	0	fl ʒiv

During this brief period of time showed the greatest degree of improvement ever manifested The central area became smooth, paler in color, and all evidence of active inflammation disappeared save from the border, and a few small circumscribed points, over the chin, lips and eyelids The inflamed, infiltrated border became greatly narrowed, less inflamed, infiltrated, elevated and crust covered The patient felt greatly relieved and less annoyed with the previous intolerable itching and burning, except for increased irritation on the parts of the eyes The border, however, steadily advanced in circumference, and transgressed to the upper eyelid of the left eye, and well beyond that of the right eye to the border of the scalp (Fig 2) This treatment was continued without material change with the same degree of improvement until Oct 25, 1904, when iodin was applied locally and quinin administered internally after the method of Hollander[5] reported at the time to possess almost specific properties This iodin quinin treatment was promptly followed by an increased tense and painful reaction first manifested by an increased redness, and painful swelling of the inflamed borders the small patch on the chin, and the muco cutaneous border of the nasal orifices, accompanied with pronounced itching, burning and pain (Fig 3) This treatment was continued in spite of its increased unpleasant effects until November 16, when the extreme discomfort of the patient, the increased inflamed condition of the border, and an inflammatory reaction on the part of the cicatrized areas, discouraged further therapeutic attempts in this special direction Immediately following the suspension of this treatment two thirds of the area originally involved became intensely inflamed, in spite of the free use of antiphlogistic remedies in the form of lotions, ointments and cold compresses, and covered with scales, crusts and studded with painful fissures and small abscesses Severe conjunctivitis of both eyes, and an iritis of the right eye were added to the list of unpleasant complications (Fig 4) This inflammation improved slowly under prolonged treatment, but the condition never regained the former degree of improvement attained by the use of the *x* ray with local applications of resorcin Other measures which were subsequently more or less unsuccessfully employed were Lassar paste, mercurial plaster, high frequency, ethyl chlorid, and the ultra violet rays from a mercury quartz lamp The eyelids of each eye were edematous, ectropic and eroded with granular ulcerations for more than a year after they became primarily involved Later they became cicatricially contracted, and the eyes inflamed from prolonged exposure and irritation Blindness occurred in the right in 1905, and in the left eye in October, 1906 Blindness and weakness following the prolonged irritation to which the patient has been subjected, have confined him to his bed since October, 1906 March 17, 1907, the disease was still active, chiefly at the ever spreading border, which had advanced behind the right ear, an inch or more into the scalp, and to the middle of the neck The intervening area was atrophic and cicatrized, covered with loosely adherent scales, and the nose and ears pinched and distorted by irregular cicatricial contraction, and studded with small patches of relapsing inflammation Nodules have always been absent, and patient has never responded to a tuberculin reaction

CASE 2—*History*—H D, aged 38 years, carriage designer, presented himself March 2, 1907 Two years prior to the date of his first visit patient noted a small red patch on the right cheek, below the eye It soon became covered with yellowish scales and soft greasy crusts and steadily increased in size with a fading center and with increased inflammation at the borders, in spite of painstaking attention on the part of the patient and his physicians

Examination—On the date of the first examination the patient presented a striking similarity to that originally presented by Case 1 The entire right cheek was the seat of a smooth depressed cicatricial like atrophy, surrounded by a slightly elevated, infiltrated, inflamed border, involving the lower eyelid, the inner and outer canthus of the right eye, and it extended in an irregular circle over the cheek, upper lip, to the right ala of the nose, the other end of the imperfectly closed circle extended from the inner canthus of the right eye to the bridge and for a short distance over the crest of the nose The mucous membrane of the upper lip and lower eyelid were reddened, edematous, and studded with granular ulcerations Numerous comedo like bodies studded merely that portion of the bridge and crest of the nose which was the site of the inflamed and actively spreading border The receding edges of the rest of the border was the seat of numerous loosely adherent scales, which on removal were covered on their under surface with numerous characteristic plugs The border was covered with yellowish and greenish crusts, irregularly fissured by numerous crevices, and rather firmly adherent to the underlying soft mushy edematous tissue Patient experienced ent as the general character of the inflammatory changes would permit an approximate estimate. Some slight change can be noted in some of the fibrils distributed to papillary portion of the corium, but, unlike Schoonheid,[14] I am unable to attach any special significance to such a feature. Dilated capillaries and lymph spaces, and occasional endarteritis was frequently observed, but not more than could be currently expected in chronic inflammation of equally severe and prolonged type.

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[5] Monatschr f Prak Dermat xxxv, p 105 Dermat. Ztschr, 1901 p 42

The prolonged congested and edematous character of the lesions and their exceedingly friable nature readily accounted for the numerous thin-walled capillaries and spaces, which were congested with red corpuscles, in various stages of preservation in the superficial layers of the corium, and also probably accounted for some of the irregular spaces, cavities and artefacts (canalization of Unna), which were also observed. No thrombi were observed in any vessels of the corium, as observed by Fordyce and Holder,[15] and nothing was noted which could in any way lead me to infer that the vessels of the corium were the seat of the first pathologic change.

Diffused hemorrhages in various stages of preservation were frequently observed in the upper layers of the corium, and many thin-walled capillaries gorged with one or more columns of well-preserved red corpuscles. The orifices of hair follicles and sudoriferous glands were almost invariably the seat of an extensive endothelial proliferation which filled their cavities to a considerable depth with dense keratinized plugs, or when accidentally or mechanically removed left them widely patulous and imparted a honey-comb appearance to the stratum corneum. The plugging of the sweat ducts was not altogether unlike that observed in porokeratosis. In some of the more severe cases of rather long duration, well-defined giant cells were occasionally observed among the plasma exudate,[16] which in themselves do not differentiate the affection from lupus and syphilis, as frequently stated. The pathologic differentiation of the affection from syphilis and lupus is facile without this distinction. My personal efforts to establish a specific cause by bacterial investigation were attended by uniformly negative results.

SUMMARY

1. Lupus erythematosus, in the absence of bacteriologic proof, appears to be a local infectious diseases.

2. The course of the disease varies with the special clinical types, and the severe forms do not yield readily to the present complex and inadequate therapeutic measures. The severe types, when favorably situated and sufficiently well circumscribed, should be extirpated, merely the border if the center is undergoing visible signs of retrogression and cicatricial atrophy, otherwise the entire lesion.

3. The conjunctival mucous membrane may become involved by direct extension of the process, and in severe cases blindness may become a complication. The primary pathologic focus appears to be in the epidermis and its adnexa, rather than in the vessels of the corium. The earliest changes are observed in the hair follicles and sebaceous glands when they are present, in the form of an active proliferation of the cellular structure.

4. These in turn call forth a focal exudation of plasma cells from the immediate capillaries, which imparts to the affection a characteristic pathology, and is often accorded primary rather than secondary importance. The sweat glands share in the same process. The process is accompanied with free superficial keratinization and plugging of the orifices. In the absence of hair follicles and glandular elements, the stimulus is primarily directed against the epidermis resulting in its down- and over-growth, and the resulting plasma exudation is more superficially placed and directed against the lower layer of the epidermis. The inflammatory change ultimately calls forth a connective tissue degeneration.

ABDOMINAL PAIN

ESPECIALLY PAIN IN CONNECTION WITH ILEUS *

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From my published works it may be gathered that I have not been able to find any abdominal organ, innervated only by the vagus or the sympathetic nerves which is provided with the sense of pain. Sensations of pain within the abdominal cavity are, according to my experience, transmitted only by the phrenic nerve, the lower six intercostal, the lumbar and the sacral nerves.

My former pupil, M. Ramstrom,[1] professor of anatomy at Upsala, has given us the first exact description of the course of these nerves within the diaphragm and the peritoneal lining of the anterior abdominal wall. He has shown that some of the older descriptions of the distribution of these nerves are incorrect. For instance, he has not seen any branches of the phrenic nerve running down from the diaphragm to the anterior abdominal wall, nor has he been able to trace a single branch of the phrenic nerve through the suspensory ligament to the capsule of the liver. Similarly he has been unable to find any twigs from the intercostal nerves of the diaphragm which extend to the capsule of the liver.

These anatomic observations of Ramstrom agree with my own experience in regard to the sensitiveness of the liver. Even a strong faradic or galvanic current applied to the surface of the liver above the gall bladder does not excite pain. In some cases in which the position of the liver was low I have separated the attached surface of the gall bladder as far as the cystic duct without causing any pain, whereas the patient complained as soon as I tilted the liver or dragged on the common bile duct, thus putting the cerebrospinal nerves of the abdominal wall on the stretch. Not only the sense of pain, but also the other modalities of sensibility—pressure, cold and heat—are absent from the liver and gall bladder as well as from the stomach and intestines.

We have often been able to ascertain that viscera involved in disease are quite as insensitive to operative measures and to electric stimuli as are sound ones. Thus the old theory defended by Flourens has been destroyed.

After many investigations—some of which have been attended by the well-known physiologist, Hj. Öhrvall and several by Professor Ramstrom as recorder—we had come to the conclusion that the parietal peritoneum of the anterior abdominal wall possesses only the sense of pain, not the senses of pressure, cold and heat. (In stroke, at least by successive steps My personal experience does not permit me to judge the value of curettement, or the superficial removal of affected area by means of a razor after the method of Ehrmann

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[14] Arch. f. Dermat. u. Syph., liv, 163.

[15] Med. Record, 1900, p. 41.

[16] Hyde and Montgomery (Text Book, 1904, p. 657) state that there are no giant cells in lupus erythematosus as in lupus. Schoonheid (Arch. f. Derm. u. Syph., liv, p. 16) states that Riesenzellen waren niemals vorhanden.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

[1] Untersuchungen uber die Nerven des Diaphragma. Aus den anatomischen Heften, hr. Merkel und R. Bonnet, 1906, xxx, 92.

ETIOLOGY

The etiology of lupus erythematosus in the absence of the discovery of a specific cause, is still a problem for further solution Opinion is fairly well divided as to whether it possesses a direct or indirect etiologic relationship to the toxemias from tuberculosis, gastrointestinal disturbances, or, in spite of the apparent non-contagious character, it is an infectious disease *per se*, and entirely independent of the former, save for their possible predisposing influences

I concur with Jadassohn that, in spite of the absence of positive bacteriologic proof, the burden of evidence is in behalf of its infectious nature and external and local character The character of the lesions, the sharply defined, inflamed spreading borders, the fading centers, their tendency to relapse and multiply, to yield to local measures and surgical intervention, to follow on the heels of slight injuries and abrasions (herpes labialis, furunculosis, burns, etc), these and many other features speak strongly for its local and infectious nature and external source

PATHOLOGY

The pathology of lupus erythematosus in the absence of a special recognized cause and in the presence of a large number of incongruous investigations, forms an interesting study Unna[9] states that "we can look in vain for a characteristic histologic entity which reflects the clinical characteristics of the affection" The reports (for the most part they are the earlier and later, in point of time) are chiefly at variance with each other in regard to the location of the primary pathologic disturbance, the former impart to the pathology an epidermal character in line with its clinical manifestations, the latter would make a form of granuloma with a distinct focal character emanating from the blood vessels of the corium and give secondary consideration and importance to the associated changes in the epidermis and adjoining tissues Any obscurity in the pathology of the affection rests chiefly on this dual interpretation, for in other respects, except in some minor details, the findings are uniformly constant and characteristic The disparity which at present exists in the reports of various investigators depends, I believe, not as Stelwagon[10] states, to the stage and character of activity of the various lesions in question, but to the opposed situation of these viewpoints

The earliest recognizable changes are in the adnexa of the epidermis, the hair follicles, sebaceous and sudoriferous glands, when these are present, otherwise in the epidermis proper, as can be readily determined by the histologic examination of the spreading border of an active lesion, to its point of gradual transition into normal tissue Holder[11] states that "so predominant are the changes in the seborrheal glands in the early lesion that it is not surprising that the older observers look on them as the probable starting point of the disease Had it not been for the fact that the lesion appeared on the palms where sebaceous glands are absent (these views) might have remained unmodified Kaposi's theory embraced sweat glands as well"

The hair follicles show active mitotic changes, the orifices are filled and distended with keratotic material and form early histologic evidence of the characteristic plugs of later clinical stages The stimulus promptly exerts its hypertrophic influence on the hair follicle and its sebaceous glands, which increase in circumference and depth It is not uncommon to observe masses of sebaceous glands hypertrophied to and beyond the layer of coil glands The latter show endothelial proliferation, cystic dilatation and keratotic plugging of their orifices

The next step in the pathologic change is a reaction on the part of the tissues, in the form of a plasma cell exudation, which issues for the most part from the immediate vessels of the corium, grouped and collected in character and directed against the abnormal follicles, sebaceous and sudoriferous glands This circumscribed exudation of small round mononuclear, deeply stained, closely crowded cells, irregularly distributed in groups, immediately arrests the attention of the observer and gives the affection its most characteristic pathologic features It is almost distinctive of the affection, and for these reasons it has probably been given primary rather than secondary importance These cells, though undergoing occasional individual degenerative changes, preserve for a long time their original character, and do not show the ordinary cellular changes which are currently observed in tuberculosis, syphilis and simple inflammation In the next stage of the process the cells begin to crowd closely around the glandular elements, completely envelop them, and gradually effect their disintegration and destruction

In the more moderate cases the disease expends its energy on the glandular elements, and the process then resolves itself by simple inflammatory change In the more severe types, in the active relapses over cicatrized areas, surfaces of mucous membrane and over areas which are devoid or poor in glandular elements, the affection expends its energy on the epidermis The earliest changes show active mitoses in the lower layers of the rete and an active acanthosis A commensurate plasma exudation follows from the superficial layers of the corium, which directs itself against the proliferating epidermis, which often shows extensive down-growth between the elongated papillæ in finger-like masses, with its cells arranged in nests and whirls, closely simulating an epithelioma The plasma cells crowd in dense masses to the very tips of the papillæ, and these when cut obliquely give them the appearance of epidermal abscesses

Both the pathologic and clinical resemblance of these well-defined cases of lupus erythematosus to some of the cases of blastomycetic dermatitis reported in the literature, is striking, and the analogy is more complete from the fact that they frequently contain well-defined, double-contoured bodies These large double-contoured bodies are frequently observed in the plasma exudate of lupus erythematosus (Neumann,[12] Veiel, Morrison[13] and others) Unna states that "rarely one finds a cell which exceeds in circumference the plasma cells, but with vacuolated (bläschen-formig) nuclei" A moderate polymorphous leucocytic invasion occurs among rete-cells and their interstices

The remaining pathologic changes noted were chiefly of a secondary nature and are for the most in accord with the findings of other investigators The elastic fibers are normally preserved and as abundantly presesthetic on account of a lymphangitis from an infected ulcer If the stomach is put at rest by the aid of a jejunostomy the pains cease Further, in the case of a patient with an inflammatory focus surrounded by small intestines and covered by a thick omentum, pressure on the abdomen will disclose no tenderness, whereas palpation per rectum may cause pain

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[9] Histopathol p 1090 and 1097 Monatschr f. Prak Dermat., 1890 ii 134
[10] Med. News 1893 Text Book. 1903 p 712.
[11] Jour Cutan Dis. 1897 p 207
[12] Wien. klin. Wochschr 1898 lxviii 1137
[13] Arch f Dermat u Syph., 1886 p 619

THE HYPOTHESES OF NOTHNAGEL AS REGARDS COLIC

In human beings suffering from intestinal fistulas and to whom no anodyne has been given, sensation of pain can not be evoked by means of chemical, thermic, mechanical or electrical stimuli applied to a portion of the gut lying outside the abdominal cavity as long as the stimulus or contractions which it causes only affect the bowel When, on the other hand, the contracting bowel drags on adhesions connecting it with the abdominal wall, it at once produces pain

Both theories of Nothnagel are hereby disproved, for the colicky pain can not be due to pressure on the nerves of the bowel wall in consequence of a tonic spasm of its muscular coat, since the intestinal wall can be crushed with a strong pair of forceps without eliciting any sensation whatsoever Further, the pain can not be due to anemia of the intestinal wall due to a spasm of its muscular coat, since it is possible by means of electric stimulus to produce so powerful a contraction of the bowel that it becomes of tumor hardness and assumes a yellowish-white color from anemia, without the patient experiencing any sensation even of being touched

Wilms, in an article[4] and later in his splendid work on ileus (1906), tried to show that all those pains which we are accustomed to term "intestinal colic" are entirely due to stretching of the mesenteric attachments In my first publication (1901) I made the statement that every distension or contraction of a gut which is attended by a pull on its attachments to the abdominal wall is necessarily painful, as it involves a stretching of the cerebrospinal nerves of the parietal serous and subserous layers With regard to the duodenum, the duodeno-jejunal flexure, the three flexures of the large intestine, and the most distal part of the ileum, it goes without saying that these portions of the bowel can not contract on their contents in front of an obstruction without giving rise to a powerful dragging of their mesenteries and at the same time a painful stretching of the nerves of sensibility of the parietal serosa In similar fashion powerful intestinal contractions are bound to involve a painful stretching of the parietal serosa in case the bowel has become fixed to the abdominal wall by adhesions and there exists at the same time some obstruction at this point

The pains in connection with ileus, due to kinking, volvulus, etc , were thus easy to understand On the other hand, it was my opinion that the stretching of a high and free mesentery of the small intestine or of the transverse colon could not account for the pain attending a stricture of these parts of the bowel when the stricture has not become adherent to the abdominal wall or in some way fixed, because I could not think that a contraction of the bowel around its contents in front of the stricture could drag on the parietal serosa and subserosa by that high and free mesenterium Wilms also accounts for the pain in these cases as being only the result of the stretching of the mesentery proximal to the stricture He considers that a loop of bowel contracting on its contents at the proximal side of a constriction, endeavors to assume a straight form in the same way as does the gut in sausage-making The mesentery, however, prevents the bowel from assuming the shape of a straight cylinder The result is a stretching of the mesentery, and this is what causes the pain In this connection an observation was made a year ago in a case in which I had to resect more than one meter of the ileum, together with the cecum and a large portion of the colon, this portion of the intestine having been excluded some months previously by means of an ileo-colostomy, on account of multiple fistulas and adhesions which could not be loosened

Under local and a short ether anesthesia the excluded portion of the bowel was completely freed from all adhesions, only the normal mesenterial attachment being left, the patient being awake, a piece of the ileum about 40 cm long was clamped and inflated with air The bowel straightened, the mesentery got stiff and assumed a fan-shaped form While in this position, standing out from the vertebral column, the patient complained of pain, but this passed off as soon as the bowel was emptied of air and the mesentery was allowed to resume its normal position The experiment was repeated with a considerably shorter piece of bowel The result was the same, for the mesentery again became tight and stood out from the vertebral column, occasioning pain Lastly a piece of the intestine only 5 or 6 cm long was shut off Although it was inflated *ad maximum*, causing the serous membrane to burst and the bowel to sink between the two layers of the mesentery for fully 1 cm , the patient felt nothing As soon, however, as the mesentery was stretched for a few moments with the fingers pain was felt These observations are in full accordance with the above mentioned view of Wilms as regards the stretching of the mesentery, a view which I believe to be correct

The pain in connection with a volvulus of the intestine or of an ovarian cyst naturally increases in proportion as the twisting comes on quickly and more parietal peritoneum is drawn into the pedicle

PAIN CAUSED BY DISPLACEMENT OF THE SEROUS MEMBRANE OF THE ANTERIOR WALL

On many occasions when performing a laparotomy I have passed into the abdominal cavity a finger covered with a thin, smooth India rubber glove dipped into saline solution and exerted a slight pressure on the anterior abdominal wall Of this the patient has no perception, but as soon as the serous membrane is displaced against the muscles or aponeuroses of the abdominal wall the patient has a feeling sometimes of touch, more often of pain, according to lesser or greater sensitiveness of the individual, and according to the degree of pressure and displacement employed When asking the patient "Have you ever felt anything like this?" I have usually received answers such as these "It feels like colic," "It feels as if the bowel is being expanded by wind," "It's like bad griping pains," 'It is worse than gripes "

Such sensations are occasioned by displacing a small, limited area of the serous membrane at nearly any point of the anterior abdominal wall On account of these observations I believe that a displacement of the serous lining takes place and gives rise to pain as soon as a loop of intestine contracts on its contents, hardens, rises and presses against the parietal peritoneum According to my opinion, these pains occur not only in connection with ileus, but also in connection with temmost cases it is the peritoneum behind the recti muscles from a point 4 to 5 cm above the umbilicus to a point midway between the umbilicus and the symphysis pubis which has been examined) Should this view of ours prove correct, it speaks decidedly in favor of the specific character of the nerves of pain In other words, it goes to prove that the entire parietal peritoneum is provided only with nerves of pain—a condition previously known to exist in the cornea alone

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[4] Münch med Wochschr 1904

It is my opinion that all painful sensations within the abdominal cavity are transmitted only by means of the parietal peritoneum and its subserous layer, both of which are richly supplied with cerebrospinal nerves around the whole of the abdominal cavity, possibly with the exception of a small area in front of the vertebral column lying below the crura of the diaphragm and between the two chains of sympathetic nerves Here, as far as I am aware, no cerebrospinal nerves have as yet been demonstrated,[2] and on a few occasions I have observed that within this area the patient does not respond to hard pressure with a finger or with an instrument, nor, furthermore, does he experience any sensation when a small portion of the mesenteric attachment at this point is put on the stretch

The opportunity is given during operations of observing that the manipulations which cause pain are those which occasion stretching of the parietal peritoneum as well as of the parietal attachments of the mesenteries. For example, pain is occasioned by the placing or removal of gauze compresses between the viscera and the parietal peritoneum, by the dragging forward of the cecum, of the vermiform appendix, or of any other organ whose normal attachment to the abdominal wall is put on the stretch, and the same principle applies to the stretching of any abdominal adhesions which may connect the viscera with the abdominal wall On the other hand, should a compress lie between the viscera without coming in contact with the abdominal wall the patient experiences no sensation when it is removed Similarly no sensation attends the stretching or breaking up of adhesions which have no connection with the abdominal parieties As far as I can judge from my observations, the parietal peritoneum along the thoracic aperture and around the foramen of Winslow is especially sensitive to stretching, displacement, etc

A slow and gradual stretching of all the layers of the abdominal wall by ascites or meteorism occasions distress rather than pain, although a high degree of meteorism may be attended by great discomfort If in a severe case of paresis of the bowel one succeeds in emptying the intestine by means of a typhlitic, a jejunal or gastric fistula, the procedure is followed by such evident relief that the great distress of the previous condition is emphasized That a maximal degree of rapidly-forming meteorism is an extremely painful condition and one which may rapidly endanger life I have witnessed in the case of a young student who had a coincident volvulus of the ileum and acute dilatation of the stomach Four hours and a quarter after the appearance of the first symptoms he was pulseless from intense pain attended with a sensation of bursting[3]

Infectious processes involving the abdominal viscera (ulcerations, acute inflammations, etc) are attended by lymphangitis and lymphadenitis of the mesenteries The infection spreads along the lymph-vessels to the subserous tissue of the abdominal wall, and inasmuch as the lymph-vessels follow the course of the arteries the lymphangitis very soon reaches the sides of the aorta, along which it then may continue up to the thoracic cavity A lymphangitis of the parietal subserous connective tissue greatly increases the sensitiveness (excitability) of the cerebrospinal nerves to any manipulation which occasions pain even under normal circumstances

All that we know of lymphangitis and lymphadenitis attending affections of the mouth, of the pharynx, of the extremities, etc, applies equally well to corresponding processes within the abdominal cavity We know for example, that the severity of pain attending a lymphangitis and lymphadenitis of the above-named regions varies according to different infections, and the same thing is true for the abdominal cavity

The irritability of the nerves of pain of the parietal peritoneum is much increased even by a slight peritoneal inflammation In the case of a serous peritonitis (*peritoneale Reizung*) the boundaries of the hyperemic zone of the parietal serosa can be mapped out almost to the centimeter by gentle palpation of the abdominal wall With further increase of the hyperemia and of the inflammation the sensitiveness is at first almost proportionally increased The fact that so many infectious processes within the abdominal cavity begin with diffuse abdominal pain may be explained by (1) an increased sensitiveness of a large portion of the parietal peritoneum owing to the lymphangitis or peritonitis, (2) a considerable increase and irregularity of peristaltic action which, in addition to pain, often produces a feeling of sickness vomiting and one or more actions of the bowels at the commencement of these illnesses On account of the increased sensitiveness the movements of the stomach and intestines against the parietal peritoneum and the stretching of their respective mesenteries are felt as severe pains In most cases, however the general peritoneal irritation soon passes off Only the part more especially infected remains in a condition of inflammation, and the abdominal pain will become localized at this spot In those cases where the infection spreads over a large portion of the peritoneal cavity, thus giving rise to a more or less general peritonitis, the pain will diminish as soon as the bowel becomes paretic and the nerve endings of the parietal peritoneum have been more or less destroyed by the severe inflammation

PAIN IN CONNECTION WITH PERFORATION

In case of visceral perforation or of an abscess which ruptures into the free abdominal cavity the primary pain is caused by the contents of the organ, or of the abscess, coming into contact with the parietal peritoneum The severity and character of the pain depends on the nature and quantity of the escaping fluid, the extent to which it immediately comes into contact with the parietal peritoneum, and, lastly, on the intensity of the contractions of the stomach and bowels brought on by the irritation of the peritoneum

Many clinical observations are explicable if one bears in mind the fact that only the parietal peritoneum can transmit painful sensations For example, the primary pain occasioned by a duodenal perforation may be referred to the iliac fossa Again, the paroxysmal pains in connection with a gastric ulcer are elicited by the movements of the stomach, that is to say, by its dragging on a parietal serous membrane which is hyper-

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[2] Here we find only more or less transversal running nerves uniting both sympathetic chains and no immediate cerebrospinal nerves.

[3] Recovery after Gastrotomy Reposition of the Ileum Jejunostomy Gastrostomy and Later Gastro-Jejunostomy, Deutsche Zeit. f. Chir., 1906 lxxxv 151

3 Stretching of the parietal (mesenteric) attachments of the stomach and intestines, as well as of string or band-like adhesions to the abdominal parietes, invariably elicits pain

4 The same thing holds true for the displacement of the parietal serosa from its normal relation to the muscles or aponeuroses of the abdominal wall

5 Most of the diseases connected with ileus are, at their commencement, attended by increased and, as a rule, irregular peristalsis

6 Chemically different substances, such as the contents of the stomach, gall bladder, intestine or abscesses, give rise to severe pains when they come into contact with a healthy or hyperemic parietal peritoneum (pain due to perforation)

7 Even that form of acute peritonitis which goes under the name of peritoneal irritation (*peritoneale Reizung*) greatly increases the sensitiveness of the parietal serous membrane

8 The sensitivenss of the parietal peritoneum at first increases *pari passu* with the inflammation, but later decreases again when the inflammation has reached a certain high degree, and in many cases may ultimately cease altogether (Compare herewith erysipelas of the skin, more especially the gangrenous kind)

I believe, finally, that we are on the way to completely understand the pains of ileus, though a great amount of work still remains to be done I consider it to be a very happy thought to bring together anatomists, physiologists, physicians and surgeons for the discussion of this question, and I feel not only greatly honored, but also deeply grateful for the invitation to contribute this introductory paper

PHYSIOLOGIC OBSERVATIONS ON EXPERIMENTALLY PRODUCED ILEUS *

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In his discussion of ileus, Nothnagel divides the condition into two classes 1, Mechanical ileus, in which there is occlusion of the intestine, 2, dynamic ileus, in which there is a syndrome of occlusion of the bowel, without, however, closure of the lumen The second class of cases occurs whenever the intestine becomes paralyzed, paretic or spastically stenosed [1] Since an earlier paper in this discussion is concerned with intestinal obstruction, we shall not repeat here our observations, already published,[2] on certain physiologic changes following mechanical closure of the bowel In that publication we raised the question as to the location of dynamic ileus Is it of central or peripheral origin? In this research an attempt is made to answer that question

In dynamic ileus we are dealing directly with a failure of normal peristalsis True peristalsis according to Bayliss and Starling, is a coordinated movement dependent on this local reflex The reflex has its seat as Magnus has shown,[3] in Auerbach's plexus Although the alimentary canal can perform its motor functions for some weeks almost normally when wholly disconnected from the central nervous system,[4] yet, according to Magnus, all spontaneous and reflex movements cease when Auerbach's plexus is removed Consequently anything which would injure this myenteric plexus would necessarily result in a cessation of peristalsis

The extrinsic innervation of the stomach and intestines has recently been much clarified by the investigations of Bayliss and Starling and by men working with them and with Langley [5] It seems fairly certain now that the splanchnic nerves, acting through the sympathetic, are purely inhibitory nerves for the intestine Concerning the effect of these nerves on the stomach, there is still controversy, but one of us has observed inhibition of gastric peristalsis during emotional excitement when the only connection between the stomach and the central nervous system was the splanchnic supply [6] Strong impulses through the splanchnic nervos, therefore, may be regarded as another cause of gastric and intestinal inactivity

From physiologic studies, therefore, we should expect failure of peristalsis to follow inhibitory impulses through the splanchnic nerves, or to result from injuries or disturbances to the myenteric plexus, or from trauma to the muscles themselves In other words, the cause of dynamic ileus may be general, by way of the central nervous system, or it may be local, in the inefficacy of Auerbach's plexus or the muscles which that plexus controls

DYNAMIC ILEUS THROUGH THE CENTRAL NERVOUS SYSTEM

The Effects of General Asthenia —When the nervous connections between the alimentary canal and the central system are intact, nothing is more remarkable than the responsiveness of the canal to conditions of general asthenia In the asthenia of animals afflicted with "distemper," for example, food will lie in the stomach or intestine all day without the slightest sign of a peristaltic wave passing over it There is total stoppage of the motor activity of the digestive organs

The condition is quite different when the canal is disconnected from the spinal cord and brain In such a state with the stomach and small intestine entirely deprived of their extrinsic innervation, these organs have been observed exhibiting their normal activities although the animal was to the last degree exhausted and toneless In one instance an animal very limp and apathetic, was fed by stomach tube 25 c c finely divided lean beef mixed with 5 gm subnitrate of bismuth, reduced to a mush by the addition of water Inspection by means of the Roentgen rays at intervals of an hour for five hours revealed normal peristalsis of the stomach and normal motor activity of the small intestine at each observation At the end of five hours, although the animal was moribund, gastric peristalsis was still prominent At the end of the sixth hour the animal was dead Autopsy revealed a deep septic process in the muscles of the neck

If the nervous connections with the cord and brain had been intact in this case, the persistence of the activity of the alimentary canal, according to our experience, would not have been seen The general bodily condition therefore, may affect the canal unfavorably through the nervous system The pathway of these unfavorable influences is probably the splanchnic, for normal activiporary irregularities of the peristaltic movement of the bowels in people not suffering from abdominal diseases I have myself felt these griping pains and I have been strongly inclined to localize the same at the anterior abdominal wall, most often to the left lower quadrant As a rule I have attributed them to the contractions of the sigmoid flexure

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* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty-eighth Annual Session held at Atlantic City, June, 1907

* From the Laboratory of Physiology in Harvard Medical School

[1] Nothnagel's Diseases of the Intestine and Peritoneum English translation Philadelphia 1904 p 377

[2] Cannon and Murphy Ann of Surgery 1906 xliii 512

[3] Magnus Archiv f d gesammt Physiol 1904 cii [illegible]

[4] Cannon (W B) American Jour of Physiol 1906, xvii, 429

[5] Jour of Physiol 1899 xxiv 99 1901 xxvi 125 May, 1901, xxvi [illegible] Elliott and Barclay Smith 1904 xxxi 272

[6] Cannon (W B) American Jour of Physiol 1905, xiii xxii

Here I may mention a case illustrating the displacement of the serous membrane of the anterior abdominal wall at the thoracic aperture It was brought about by a subserous myoma of the fundus uteri of about the size of a mandarin, in a woman eight or nine months pregnant She had suddenly been taken ill with severe pains, vomiting and inability to pass flatus A diagnosis was made by her medical attendant of a twisted ovarian cyst. As soon as the myoma had been removed under local anesthesia all symptoms disappeared The ovaries were normal The pregnancy went on to its normal termination I have record of another patient who had a small subserous myoma of the uterus and in whom, after the seventh month of pregnancy, abdominal pains were produced by any movement They were felt as a very painful friction and disappeared as soon as the tumor was removed

If the bowel wall on the proximal side of an obstruction is considerably thickened and the serous coat rough the *Darmsteifung* is naturally attended by a much more extensive displacement of the parietal peritoneum than in the case of a normal intestinal wall Contrary to Wilms, I consider this factor also to be the cause of the colicky pain which attends intestinal obstruction I have consequently come to the conclusion that 'gripes" are due partly to a stretching of the parietal attachments of the bowel and partly to a displacement of the serous lining of the abdominal wall

REFLEX RIGIDITY OF THE ABDOMINAL MUSCLES

The normal response of the abdominal muscles to an acute sensation of pain which originates in the parietal peritoneum or subserous tissue lies in a reflex contraction (*defense musculaire*) In cases of violent and very extensive peritoneal irritation (hyperemia, slight edema) the abdomen assumes a board-like rigidity and the respiration becomes costal in type, for the abdominal muscles and the diaphragm are in a state of tonic contraction In this way the range of movement of the abdominal organs is greatly diminished and consequently the abdominal pain is greatly lessened Compare with this the endeavor of patients suffering from severe abdominal pains to get relief by lying on the "belly" or by fixing something tightly round the abdomen The extension of the reflex muscular rigidity corresponds closely to the area of peritoneal irritation of the parietal serosa We know little as yet about *defense musculaire* in connection with a mechanical ileus before the onset of peritonitis It is necessary to observe with care every case of severe colicky pain attending an intestinal obstruction in order to see whether a tonic contraction of the abdominal muscles and diaphragm takes place with the object of diminishing the movements of the bowels and indirectly the severity of the pains

In acute inflammatory diseases of the abdomen I have not observed the presence of cutaneous hyperalgesia so often as one might expect, especially in consideration of the "*triade douloureuse*" of Dieulafoy (1899) which he regarded as necessary for the diagnosis of an acute appendicitis—cutaneous hyperalgesia reflex muscular rigidity, tenderness on pressure Before applying Head's theory of cutaneous hyperalgesia to a given case one ought to consider the question whether in that special case an infectious lymphangitis along the posterior abdominal wall and around the vertebral column might not cause a hyperesthesia of the sensitive nerve trunks and spinal ganglia of that region It will, of course, be clear to every one that this is only a working hypothesis In those few cases of acute appendicitis with cutaneous hyperalgesia which have come under my care since I began to pay more attention to this matter I have observed co-existing tenderness on deep pressure in the angle between the twelfth rib and the erector spinae or somewhat lower down at the border of this muscle

When considering the *pains connected with infectious diseases of the liver and gall bladder* one has to remember that well-known embryologic facts, as well as my own researches and the investigations of Ramstrom all lead to the assumption that the liver, the gall bladder and the extrahepatic bile passages do not possess nerves of pain One has further to consider the distribution of the lymph vessels from these organs to the posterior abdominal wall and diaphragm as well as their anastomoses with the lymphatics of the duodenum and pancreas One can then easily understand that infectious diseases of the liver and gall bladder are apt to be followed by spasms of the diaphragm and that the movements of the common bile duct, the duodenum and stomach may be attended by pain When the gall bladder contracts spasmodically in order to expel its contents there results a stretching of the cystic and common bile ducts and consequently a displacement of the parietal peritoneum and the extremely sensitive retroperitoneal connective tissue around the common bile duct If a tube has been fixed (water tight) into the gall bladder in a case of cystostomy for cholecystitis, 100 c c or more of saline solution may be made to pass from the gall bladder into the duodenum (the biliary passages being free) without the patient feeling anything so long as the solution is being slowly injected into the gall bladder If the injection is made with a little greater force the patient almost immediately complains of colicky pain in the back

With a shrunken gall bladder and a very wide common bile duct biliary colic due to the stretching or distension of the common bile duct is inconceivable

It is quite necessary to consider carefully the account which the patient gives of his pain Lately a patient of mine suffering from an acute hemorrhagic pancreatitis stated that the attack of pain began with a sensation as if the large blood vessel at the back had burst near the pit of the stomach The autopsy showed in addition to the pancreatic hemorrhages, a large retroperitoneal extravasation around the celiac artery and the aorta One must never forget how difficult it is to localize pain and to how great an extent a correct interpretation of the site of painful sensation is a matter of practice

SUMMARY

In estimating abdominal pain, and especially in connection with illnesses giving the symptoms of "ileus," we must bear in mind, briefly, that

1 Pains do not originate within the abdominal organs which are supplied only by sympathetic fibers and the vagus nerves

2 All pains originate in the abdominal wall, more especially in the parietal serous membrane and subserous connective tissue structures which are innervated by the cerebrospinal nerves

time for three full hours after the feeding. And after the first departure of food from the stomach the discharge continued very slowly. The passage through the small intestine was also retarded; in only one case did the food (potato) appear in the large intestine before the end of seven hours of observation.

When the organs were removed from the abdomen and handled gently in air, the movement of the food was retarded to a greater degree than when they were fingered in the peritoneal cavity or under warm normal salt solution. So great was the retardation that in one case not all the food had passed into the large intestine from the ileum even twenty-six hours after feeding. Indeed, the condition then was that reached normally in about five hours.

Rougher treatment in air, such as stripping the gut between the fingers, resulted in increased inertia of the stomach and extreme sluggishness of the small intestine. In one case of harsh manipulation no food had left the stomach at the end of seven hours. And in another case the food had not yet reached the large intestine twenty-four hours after the feeding (the food used, as already noted, begins to appear there normally at the end of two or three hours), only a slight amount of food was in the small intestine, and the stomach was still well filled.

It should be remembered that the subjects of these observations were vigorous normal animals. Doubtless the factors which act to check the movements of the alimentary canal must have a greatly increased effect when the strength has been sapped and the bodily vigor lost.

Manipulation of the stomach and intestine, therefore, even gently and under the most favorable circumstances, produced in our experiments much greater effect in the direction of postoperative inactivity than any other of the factors under control during operation. Whether manipulation produces its effects directly on the mechanisms in the wall of the canal or indirectly through reflex inhibitions from the central nervous system was left undetermined.

The question of the source of this postoperative inactivity can be put to experimental test. If it is due to reflex inhibition, manipulation after the splanchnic nerves are cut ought to have no effect, since the pathway for inhibitory impulses is destroyed. On the other hand, if after severance of the splanchnics manipulation still produces inactivity, the result can be attributed to local disturbance.

Animals in which the splanchnic nerves had been severed aseptically several days before were treated in the same manner as the normal animals on which the earlier observations were made. They were etherized a half-hour and during that time the abdomen was opened and the stomach and intestines under aseptic precautions were stripped between the fingers, i. e., roughly handled. Within an hour after etherization ceased the animals were given 25 c.c. potato plus 5 gm. subnitrate made at the regular intervals after the feeding.

In one animal there was no discharge from the stomach during seven hours of observation, though the next day the stomach was largely empty. Another animal vomited the gastric contents after the first hour. In a third case nothing left the stomach during the first six hours and then the outgo was slow. In still another instance food began to pass the pylorus at the end of an hour, but the exit was very slow, and at the end of seven hours no food had reached the large intestine. These results correspond closely to the results following manipulation of the stomach and intestines of normal animals. In both there is a marked retardation of the discharge of food from the stomach and a sluggish condition of the small intestine. The effects of handling, therefore are not necessarily the consequence of reflex inhibitions from the spinal cord, but can be entirely explained as disturbances of the local mechanisms in the wall of the gut.[9]

DISTINCTION BETWEEN LOCAL AND SPINAL ORIGIN OF DYNAMIC ILEUS

From the foregoing evidence it is clear that in any case of dynamic ileus a distinction must be made between the inactivity due to inhibitory impulses from the central nervous system and inactivity due to local disturbances in the gastrointestinal wall. It is of the first importance to determine the source of the inactivity. For example, in our experiments stretching of the gut by forcible injection causes a prolonged inhibition of movement. Section of the gut and suture likewise cause a local blocking, the food is for some time not forced into the region of the operation. Peritonitis may be accompanied by total cessation of gastrointestinal activity. In these various cases where is the seat of the trouble? Is it local or imposed from the spinal cord? Unfortunately our experiments have not proceeded far enough to give us definite answers to these questions.

The practical importance of the distinction between intrinsic and extrinsic inhibition of the alimentary canal will be recognized in considering the possibilities of treatment. As already made clear, the normal stomach and intestine are capable of carrying on their motor activities quite independent of the central nervous system. Consequently if the inhibition is extrinsic any agent that will check the delivery of inhibitory impulses from the cord to the canal would permit the canal to resume its normal functioning. If, on the other hand the inactivity is the direct result of local disturbance this same agent would have no effect in promoting the restoration of peristalsis. It is questionable, indeed, whether the canal, inactive from local cause, can be made to exhibit normal peristalsis by the application of any agent until there has been at least a partial recovery of the normal condition.

In our experiments some attempts have been made to stimulate the bowel to move normally after local disturbance. The stomach and intestines were manipulated in the manner usually resulting in paralysis. After recovery from etherization the animals were given the same amount of potato mixed with bismuth subnitrate as was given in other cases, but the mixture was moistened with 4 c.c. tincture of aloes. Tincture of aloes has recently been shown to be a particularly effective agent in promoting peristalsis in the cat.[10] In these animals with manipulated gastrointestinal tract no improvement of peristalsis could be ascribed to the aloes. The figures obtained at the regular times of observation corresponded closely to those obtained from animals in which the canal was merely handled and no drug was given with the food.

On the other hand when the inhibition is imposed from the spinal cord it should be possible to start the ties have been observed in the state of asthenia when only splanchnic nerves had been severed and the vagi were still intact

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[9] Recently Meltzer and Auer (Proceedings of the Society for Experimental Biology and Medicine, 1907, iv, 9) have shown that cecal peristalsis of the rabbit is inhibited by dissecting the skin over the abdomen. This is reflex inhibition for it does not occur if the spinal cord is previously destroyed. On the other hand previous destruction of the cord does not prevent the direct inhibition of peristalsis observed when the abdomen is opened. These observations and our own are in perfect agreement.

[10] Hall and Nelson: The Journal A. M. A., 1906, xlvii, 1519.

The Effect of Splanchnic Reflexes—Nothnagel reports a case of dynamic ileus resulting from inflammation of an undescended testicle and states that inflamed hydrocele, contusions of the testicle, operations on piles and suppurations in the abdominal region have all been known to produce symptoms of occlusion of the intestine Kocher, on the contrary, seems inclined to discredit the idea that dynamic ileus is a purely functional disturbance "Little mechanical obstacles," he declares, "lie at the bottom of the majority of cases of so-called dynamic ileus"[7]

It is possible to prove the existence of reflex dynamic ileus by means of experiment Male animals (cats) were chosen for observation They were treated exactly as described in a former series of experiments[2]—in general, etherized for a half-hour, and within an hour after stopping the anesthetic given 25 c c mashed potato mixed with 5 gm bismuth subnitrate The discharge of food from the stomach and its passage through the small intestine were then determined by Roentgen ray observations at the end of the first half-hour and at hourly intervals for six hours As described in the earlier investigations, the rate of passage from the stomach was judged from the total length of the shadows of the food in the small intestine at the regular times of observation The passage through the small intestine could be judged from the first appearance of a shadow in the large intestine

In testing experimentally reflex dynamic ileus, the testicles were crushed during the half-hour of etherization In order to learn the effect of this procedure it is necessary to compare the results of observations in these cases with the results of observations after the animals were merely etherized for a half-hour In the following figures are presented in centimeters the aggregate length of the food masses in the small intestine at the regular times of observation, after a half-hour's etherization, and after the same period of etherization during which the testicles were crushed These are typical cases[8]

	Time in Hours						
	½ cm	1 cm	2 cm	3 cm	4 cm	5 cm.	6 cm
Etherized half hour	3	11	17	21 5	22.5	13 5	12
Etherized ½ hour testicles crushed	0	0	0	0	0	8	15

It will be noted in this comparison that, although the discharge from the stomach was not entirely checked, the operation plus the etherization retarded the exit for a number of hours Furthermore, the discharge under these circumstances was characteristically slow The movement through the small intestine was likewise very sluggish, in the condition of etherization alone, material reaches the large intestine in four or five hours, in the condition of etherization plus injury to the testicles, in only one case out of ten did the material pass the small intestine within six hours How much more time was required for the passage was not determined

It may be contended that the condition presented by these animals was not true ileus paralyticus, that, although the food was moving slowly from the stomach and through the small intestine, yet it was moving The initial failure of peristalsis for a number of hours must, however, be regarded as indicative These animals were vigorous animals, the injury done them was done under ether when nervous conduction may be much depressed Doubtless if the operation were superposed on a state of bodily weakness, or were performed without anesthesia, or were long continued as in states of inflammation—thus simulating common conditions in human beings—the results would have been even more pronounced

As previously stated, recent physiologic investigations make it probable that reflex inhibitions of peristalsis are mediated through the splanchnic nerves The question as to whether these nerves are in the cases above described the pathways of inhibitory impulses can be tested experimentally Animals were operated on aseptically, and the splanchnic nerves cut on both sides of the body After recovery from this operation, usually within a week, the animals were again etherized and the testicles crushed The motor activities of the alimentary canal were then tested in the manner already explained The following figures offer a comparison between the results when the testicles of the normal animal are crushed and when they are crushed in an animal with splanchnic nerves severed These figures, from typical cases, represent in centimeters the aggregate length of the food masses in the small intestine at the regular times of observation

	Time in Hours						
	½ cm	1 cm	2 cm	3 cm	4 cm.	5 cm	6 cm
Ether testicles crushed	0	0	0	0	0	8	15
Splanchnics cut, ether, testicles crushed	16	29	33	27	22	10	1

Evidently the severing of the splanchnic nerves has entirely obviated the inhibition of activity due to crushing of the testicle Indeed, the results typically secured in these cases compare very favorably with the results from normal unetherized animals, as the following figures show

	Time in Hours.						
	½ cm	1 cm	2 cm	3 cm	4 cm.	5 cm	6 cm
Normal (average 4 cases)	10	31	43	25	21	13	8
Splanchnics cut ether testicles crushed (average 4 cases)	13.5	28	34	28	24	15	10

The discharge from the stomach is thus made practically normal by cutting the splanchnic nerves And the passage through the small intestine is also reduced to two or three hours (approximately the normal rate for potato in these animals) merely by abolishing splanchnic impulses

From the observations above recorded we may conclude that not only can ileus paralyticus be produced without mechanical changes in or about the intestinal wall but that the condition is one of inhibition an inhibition conveyed to the stomach and intestines through the splanchnic nerves

THE QUESTION OF LOCAL PARALYSIS

In an earlier research,[2] duration of etherization, exposure of the stomach and intestines to the air, cooling and handling these organs, were studied as possible factors in the production of postoperative paralysis Etherization, either one-half or one and one-half hours, was found not to delay to any marked degree the discharge of food from the stomach, exposure to the air and unusual cooling of the gut likewise caused no noteworthy delay, but most striking effects were seen after handling the digestive organs Even when the stomach and intestines were handled most gently, either under warm salt solution or within the peritoneal cavity, no movements of the stomach were seen and no discharge into the intestermed ileus, or iliac passion, no longer compels the use of such indefinite terms. The Greek verb εἰλεῖν, from which comes εἰλεός, is practically equivalent in a medical sense to the Latin volvo. The term ileum, therefore, should be restricted to that lesion of the bowel in which the intestine is rolled, twisted or knotted, so as to produce symptoms of obstruction. Ileus and volvulus should be synonymous terms. The word volvulus was formerly rather loosely employed, though it is not now.

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[7] Mittheilungen aus dem Grenzgebieten der Med. und Chir 18[illegible] iv 201

[8] Once a female cat was used the abdomen was opened during the half hour of etherization and the ovaries crushed Results tallied closely with those observed after crushing the testicles

Inspection of English medical dictionaries will be convincing as to the need for this restriction of the use of the word ileus or its complete elimination from medical nomenclature. A number of mechanical disarrangements of the intestinal tube may cause colic, constipation and vomiting, but there is no good etymologic or other reason for classing them all under the name ileus. As hernia, from ἔρνος, a sprout, should be applied to a protrusion, so ileus, from εἰλεός, should be applied to twisting, and to twisting only, of the bowel. The word should not be applied to intestinal obstruction, strangulation or colic from any other cause.

It is often difficult to make a differential diagnosis between intestinal obstruction and such conditions as lead colic, flatulent colic, arsenical poisoning, acute enteritis, Asiatic cholera, acute pancreatitis, perforated ulcer of the stomach, thrombosis and embolism of the mesenteric arteries, torsion of the great omentum, inflamed undescended testicle, paralysis of the intestinal muscles, hysteria, acute appendicitis and peritonitis. The examination of the patient should be repeated from hour to hour, in order that no one of the rapidly developing diagnostic points be overlooked. It is only in the earliest stages of the affection that an exact diagnosis between the different forms of obstruction is likely to be feasible. The development of tympanites as a symptom or of peritonitis as a secondary condition often destroys the possibility of an accurate investigation except by exploratory investigation.

Strangulation not only closes the caliber of the bowel, so as to prevent the movement of the fecal current and the gaseous contents, but it also severely irritates the nerves in the mesentery and in the gut and compresses the blood and lymph channels in those structures. The result is that grave arterial anemia and venous hyperemia are produced, and gangrene and perforation may occur. It is a more or less elastic construction and may be defined as obstruction plus circulatory interference.

An external hernia at the inguinal femoral or umbilical opening may become strangulated. So may a hernia through one of the more unusual orifices, such as the obturator foramen, the sciatic notch, and the small openings occasionally found in the linea alba, between the navel and the ensiform cartilage. The medical attendant should never neglect to explore these recognized seats of external hernia whenever intestinal obstruction is under consideration. A small femoral hernia may be concealed by enlarged, overlying lymph nodes. In children a scrotal hernia may be translucent and suggest hydrocele. The rectum must always be examined with the finger or proctoscope, to exclude the existence of impaction of feces or stenosis of the lower bowel from tumor. Thomas Bryant called attention years ago to a ballooning, or dilatation of the rectum when stenosis of the lumen of the descending or sigmoid colon exists. This symptom may lead to the discovery of an occlusion from carcinoma or other cause too high to be felt with the finger inserted through the anus.

The results of strangulated gut are practically the same, whatever the anatomic lesion causing the constriction. It makes little difference in the general aspect of the case whether the strangling be due to compression by, entanglement in, or twists, kinks or knottings from omphalo-mesenteric vestiges or peritonitic adhesions, to incarceration in congenital or acquired apertures or fissures, to internal hernias in the foramen of Winslow, the paracecal fossæ the intersigmoid space, the duodenojejunal region, or through diaphragmatic openings, or to an external hernia incompletely reduced or not reduced at all. A mere tear in the parietal peritoneum may afford an opportunity for the intestine to slip under it and become strangulated.

The symptoms do not in the main vary much from the characteristic complex when the strangulation arises secondarily to a chronic obstruction of the bowel. Here, however, there is usually discoverable a history of a series of antecedent events pointing to stenosis or obturation.

The diagnosis of probable strangulation, primary as well as secondary, must rest on the sudden onset of great pain, vomiting, absolute stoppage of feces and gas, and intense prostration or collapse. These symptoms may arise immediately after the receipt of a blow on the abdomen, or their advent may follow sudden violent muscular exertion, straining at stool or active purgation from diarrhea or a cathartic.

The pain is generally the first symptom. It is violent, continuous and occasionally increased by paroxysmal colic. It is practically always a part of the symptom-complex, unless gangrene has occurred and the patient has gone into collapse and stupor. It may be localized at or near the site of strangulation and may be relieved somewhat by pressure. In volvulus the pain is likely to be more diffused than in internal strangulation by a band or the like. This initial pain may in time be followed by the secondary pain which comes from the development of peritonitis, provided that peritonitis develops ere the death of the patient or his relief by treatment. The pain of peritonitis is not relieved by pressure. It is possible that a slight degree of tenderness on pressure may be present from increased sensitiveness of the bowel, when no peritonitis has as yet developed. This is probably due to the violent contractions of which the muscular tunic of the bowel has been the seat.

The advent of pain is quickly followed by vomiting, due probably to the traction on the peritoneum at the point of strangulation. The vomiting under rare circumstances may precede the access of pain. It usually occurs within the first twenty-four hours and persists until *death, though it may cease shortly before that issue*. It is accompanied in very many instances by nausea, hiccough and eructations of gas. The vomitus is at first the contents of the stomach, then the intestinal fluids, colored by bile so as to be brownish, yellowish or pea-soup-like, are ejected, and finally fecal vomiting is established. Fecal vomiting need not occur. The seat of the obstruction may be too high in the intestinal canal or the patient may succumb to shock before it has appeared. The time of its appearance may vary from two to five or more days. Death is not uncommon in two or three days, though there are cases that run a more chronic course.

The complete obliteration of the caliber of the gut and the reflex influence exerted by strangulation induce absolute constipation. This obstipation appears as soon as the strangulation occurs and no discharge whatever of feces or flatus takes place. Even when the strangumovements of the canal by depressing the action of the cord or by blocking the impulses from the splanchnics As maintained by Craig[11] and others, salicylate of physostigmin acts favorably as a remedy for postoperative paresis in clinical cases In all probability its usefulness is restricted to cases in which the paresis is of central origin, for its physiologic action includes depression of the functions of the spinal cord and powerful stimulation of the stomach and intestines[12]—precisely the requirements for obviating reflex inhibition of the alimentary canal

We have tested the action of physostigmin salicylate experimentally on animals A sixtieth of a grain in a freshly-prepared solution was given subcutaneously at various times with relation to the etherization and crushing of the testicles—two hours before etherization, an hour before etherization, during the anesthesia, and subsequently while the food was stagnant in the stomach In our experience giving physostigmin at any time before the operation or during the anesthesia resulted in no perceptible improvement of the passage of food through the alimentary canal But when the drug was given afterward during the period of stagnation there resulted a very marked, but only temporary increase of peristalsis In the following figures a comparison is presented between the amount of food in the small intestine in two typical cases, one in which the testicles were crushed, the other in which the testicles were crushed and a sixtieth of a grain of physostigmin administered about two hours after the feeding The figures give in centimeters the aggregate length of the food masses in the small intestine at the times indicated

	Time in Hours						
	½ cm	1 cm	2 cm	3 cm	4 cm.	5 cm.	6 cm
Ether testicles crushed	0	0	0	0	0	8	15
Ether testicles crushed physostigmin at two hours	0	0	0	32	38	41	37

It is clear from the figures for the third hour that the administration of the drug at the second hour had produced suddenly a very abundant discharge from the stomach into the intestine Nor was gastric peristalsis alone stimulated, intestinal peristalsis was also remarkably active—lively movements of the food masses in the intestinal coils were seen on all sides But at the fourth hour and thereafter all was quiet again As shown by the figures, the discharge from the stomach did not continue to be abundant and the food in the intestinal coils lay almost entirely quiescent, at the end of six hours no food had reached the large intestine The physostigmin, therefore, although given in an amount sufficient to cause the cat's muscles to twitch, had only a temporary effect Within two hours this action had apparently ceased These results raise a question as to the reasonableness of attributing great efficacy to a single dose of physostigmin in clinical cases, when the passage of feces occurred from eight hours to three days after the administration of the drug It would seem as if physostigmin, because of its relatively brief action, could not properly be held accountable for the results Be that as it may, however, there is no doubt that, temporarily at least, the salicylate of physostigmin will destroy reflex inhibition of the alimentary canal and cause the normal movements to proceed

In conclusion it should be stated that the present report of our work is preliminary and that many features need still to be made clear The point we wish to emphasize is the distinction between dynamic ileus of spinal origin and dynamic ileus of local origin in the wall of the gut The various conditions which affect one or the other of these causes of inactivity have not yet been experimentally studied, but on such a study depends the possibility of rational judgment in any particular case

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THE SYMPTOMS AND DIAGNOSIS OF STRANGULATION OF THE INTESTINE *

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The development of the operative surgery of the abdomen has created in the minds of surgeons such an assurance of success that they are liable to neglect the study of diagnosis and to resort too cheerily to exploratory investigation of lesions in this cavity Physicians, on the other hand, being more or less unfamiliar with the innocuousness of aseptic inspection of the abdominal contents, lose valuable time in fruitless efforts to overcome mechanical impediments to peristalsis Patients would have a fuller measure of scientific aid in their dire extremity, if surgeons could profit by frequent opportunity to see cases of intestinal obstruction early enough to study initial symptoms On the other hand, many lives would undoubtedly be saved, if physicians realized the futility of wasting time in the effort to settle diagnostic problems when the fecal current and perhaps the blood circulation are stopped by mechanical causes, demanding instant manipulative removal

Such conditions demand the best consideration of philosophical minds, alert to appreciate the importance of both medical and surgical skill Good "team" work on the part of a physician and a surgeon, or the services of a practitioner who has had both medical and surgical training, will give the suffering patient the best chance for recovery Some of us, who now practice surgery as a specialty, would often be most unhappy, if we did not possess, through previous experience in internal medicine, some ability to weigh our own surgical opinions and even to review critically the judgments of our medical colleagues

The symptoms of intestinal obstruction and intestinal strangulation are necessarily similar, because strangulation is usually a complication of obstruction It is an interference with the vascular and lymphatic circulation in the wall of the bowel and in the mesentery It may occur as an incident in the history of acute or chronic obstruction In the former the strangulation may arise coincidently with the obstruction In both it may arise only after the obstruction has existed for a considerable time Occasionally, as in some hernias, a portion only of the wall of the intestinal tube may be strangulated with no real occlusion of the caliber of the gut Yet the influence exerted on the muscular coat of the bowel produces, as a rule, very promptly a symptom-complex practically identical with that of obstruction These symptoms usually continue until the strangulation is relieved or the patient dies, sometimes, however, local gangrene occurs, an artificial anus is formed and the patient recovers

Ignorance of the causes of the symptoms formerly ance but such confession is an evidence of sincere concern for the welfare of the patient

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[11] American Jour of Obst and Dis Women and Children 1904 xlix, p 449

[12] Cushny (A R) Pharmacology and Therapeutics Philadelphia 1901 317 319

* Read in the Section on Surgery and Anatomy of the American Medical Association at the Fifty eighth Annual Session, held at Atlantic City June 1907

Let it be remembered that there may be more than one point of obstruction or strangulation, especially in cases secondary to former attacks of peritonitis Do not forget that visible intestinal peristalsis with paroxysmal rigidity and stiffening of definite loops of intestine, after percussion of the abdominal wall, are absent in volvulus (axial rotation) and internal hernia with strangulation, unless these conditions are engrafted on chronic obstruction This symptom may be of diagnostic value, however, to establish the presence of intestinal obstruction in chronic forms of occlusion, where the muscular coat has become hypertrophied

Recollect the absence of peristalsis and the possible occurrence of adynamic obstruction in appendicitis renal and biliary colic, and peritonitis, which are due to inhibition of power in the musculature of the intestine. In these instances pain and sensitiveness may prevent the passage of feces along the intestinal canal and simulate obstruction There is perhaps a sort of neurotic constipation here, such as may occur in healthy persons who have not access to decent toilet facilities

When the surgeon has concluded that strangulated intestine is causing the symptoms, he should endeavor to make up his mind as to the location of the trouble and the character of the strangulating process

The most common site of strangulating lesions, not associated with internal hernia, is the right lower quadrant of the abdomen The lower portion of the ileum and the cecal region, therefore, should be inspected first Volvulus, however, is most apt to occur in the sigmoid colon especially in the aged Intussusception is not particularly common in the ileocecal region, but it is perhaps most frequently found in some portion of the colon It is the more frequent disease of the young Strangulative lesions, being usually acute, are more difficult of differentiation than those other obstructive lesions which are chronic

The change in contour of the belly, due to tympany, will sometimes aid in settling the site, as has already been stated In obese patients this determination becomes a matter of increased difficulty It must be recollected that the sigmoid colon twisted on its axis may fill from distension the abdominal cavity in an astonishing way and extend even to the right hypochondrium In such cases, however, the left flank also is apt to be convex from distension The upper lumbar region, on both sides behind, will give on percussion, it is said, a long deep note instead of the normal high and flat note, when the obstruction is in the sigmoid or descending colon This change in percussion note in the back will be found only on the right side, when the occluding lesion is in the transverse colon or at the splenic flexure This sign seems to have some value

The pain is less severe in volvulus than in strangulation by omphalo-mesenteric remains, or bands, and sometimes the pain of volvulus may be referred to the back In volvulus high up in the small bowel there may occur frequent evacuations from the bowels This is unlike internal hernia-form strangulation and strangulation from bands, which are accompanied by absolute constipation Occasionally a little blood may be passed with the feces in cases of volvulus, especially of the sigmoid flexure Rectal tenesmus is an indication of volvulus being the cause of the obstruction, rather than strangulation from other causes Fecal vomiting is not common in volvulus, but it is common in strangulation from entanglement under bands and in openings Volvulus is more apt to be preceded by habitual constipation, and causes less intense collapse than strangulation from bands

A previous history of peritonitis would point rather to strangulation by bands, or kinks or knots, than to strangulation from volvulus were it not a fact that peritonitis may cause narrowing of the mesentery from infiltration and cicatricial changes which tend to make axial rotation (volvulus) occur more readily

The differential diagnosis is farther obscured at times by the circumstance that volvulus of the small intestines and strangulation by bands and cords may be coexistent

My final word is If the diagnosis can not be established with a fair degree of certainty within twenty-four hours, or at most forty-eight hours, open the abdomen aseptically and inspect its contents

313 South Seventeenth Street

[THIS SYMPOSIUM ON ILEUS TO BE CONTINUED THE DISCUSSION WILL FOLLOW THE LAST PAPER]

THE OCCURRENCE OF TYPHOID BACILLI IN THE STOOLS OF TYPHOID PATIENTS,

WITH A DISCUSSION OF THE PATHOGENESIS OF TYPHOID FEVER [*]

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The view is generally held that the intestinal contents in typhoid fever are swarming with typhoid bacilli The fact that many investigators have often had difficulty in isolating *Bacillus typhosus* from the stools of undoubted cases of typhoid fever has been attributed to imperfect technical methods Some observations made by one of us seemed to indicate that the reason typhoid bacilli were not obtained from the stools during the height of the disease might be due, not to faulty bacteriologic methods, but to the fact that the typhoid micro-organisms were either absent from the feces or present in extremely small numbers

The studies here presented extend over two years About 75 per cent of the patients had fever at the time of the examination All were clinically typhoid fever In only one instance was the agglutination test persistently negative It is probable that this was a case of infection with *Bacillus fæcalis alkaligenes* Each day the sickest patients to be found in the wards were selected for the examination For the opportunity of making this study we are indebted to the visiting physicians of the Massachusetts General Hospital

When Gaffky[1] reported, in 1884, that he had cultivated on artificial media the specific micro-organism of typhoid fever, he made no claim that he could isolate it from the intestinal contents In 13 cases he obtained the typhoid bacillus from the spleen and in one case from the liver Pfeiffer,[2] in 1885, was the first to assert that typhoid bacilli were present in the stools As he knew nothing about *Bacillus coli* and did not fully

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[*] Read in the Section on Pathology and Physiology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City June, 1907

[*] From the Laboratory of Clinical Pathology, Harvard University (Director Prof R H Fitz) This investigation was begun in the Laboratory of Bacteriology The facilities of the bacteriologic department were available through the courtesy of Prof H C Ernst

[1] Mitt a d Kaiserlich Gesundheits 1884 ii 372

[2] Deutsche med Wochschr 1885 p 500

lation affects the ileum the contents of the large bowel are not expelled. There are but very few exceptions to this rule of absolute constipation. Peristalsis below the site of the lesion seems to be inhibited by reflex action. The contents of the rectum and lower colon may be washed out with enemas, but there is as a rule no spontaneous evacuation of intestinal gases or of feces. This constipation may be difficult to differentiate from the paralytic intestinal inertia, which may follow incision of the abdominal muscles and manipulation of the bowels during the operative treatment of various abdominal and pelvic lesions. Such inhibition of peristalsis may occur without the existence of postoperative peritonitis.

Coincident with this more or less characteristic symptomatic triad of strangulation a most profound collapse occurs. This prostration is evidenced by a frequent small pulse, pallor of the skin, low temperature, anxious facies, sunken eyes and the congested internal viscera of shock. Death may take place as a result of this condition, which is probably due to the reflex inhibition of the heart's action and a consequent lowered blood pressure. The immediate cause of the fatal issue is probably anemia of the nervous centers. Similar profound depression of the vital forces occurs in other forms of acute intestinal obstruction, but it is especially noticeable in instances of obstruction with strangulation. The exact form of the strangulation does not seem to exert much difference in the degree of shock. In this form of shock, as in surgical shock from other lesions, the patient remains conscious except in the agony of death.

The severity of symptoms depends on the degree of the strangulation and the amount of bowel and mesentery deprived of its normal circulation. The tighter the strangulation and the greater the extent of bowel involved the more urgent the symptoms. Death from shock, from general exhaustion, caused by the pain and vomiting, or from peritonitis is to be expected early in severe cases. Death is likely to occur before gangrene and perforation take place.

Tympanites occurs only to a moderate degree, as a rule, in strangulation from hernia and bands, but is apt to be marked in volvulus. When, however, peritonitis has developed as a secondary complication the distension becomes general and may be very great. The meteorism is localized at first in the involved loop of bowel and the portion of intestine just above the strangulation. It should be remembered that an extremely distended gut does not give a tympanitic note on percussion, but a low note more like that obtained when the chest is percussed over normal lung.

If no localized tympanites is seen it is probable that the strangulation is incomplete or that the intestinal gases are escaping through minute perforations in the bowel wall. It is the venous stagnation in the bowel from the interference with circulation that causes the localized meteorism due to unabsorbed gases. This localized tympanites differs from the distension that arises from putrefaction of stagnating intestinal contents, and occurs more promptly than the latter.

The locally distended bowel in strangulation changes the shape of the abdomen, hence the least asymmetry should be carefully studied. The bulging of the flanks laterally, the puffing up of the umbilical region in which lies the small intestine, or the distended outline of the colon or of the sigmoid flexure may give a hint, if the surgeon sees the case early and is alert. The strangulated loop is anchored in one spot, and as it becomes distended changes the aspect of the abdominal surface. The rigid loop may be detected by palpation, because it feels tense and hard. General anesthesia may, by relaxing the abdominal muscle, aid in enabling this fact to be discovered by the examiner's hand.

A study of the urine, feces and blood may perhaps aid in establishing a diagnosis of the existence of obstruction, if not in actually helping the surgeon to a conclusion as to the occurrence of actual strangulation. The discovery of a large amount of indican in the urine during the first two or three days seems to indicate either acute peritonitis or occlusion of the small intestine. Hence when the other symptoms exclude acute peritonitis, intestinal obstruction may tentatively be assumed to exist in the small bowel, if collateral evidence points to interference with the permeability of the intestinal tube. According to Hemmeter, peritonitis, multiple stenosis in both small and large intestine, and a chronic stenosis in the large bowel may show excessive indicanuria. These possibilities, therefore, modify the value of this symptom. If excessive indicanuria is absent, acute general peritonitis is probably not present. A deficiency in the amount of urine excreted is considered by some writers to be attributable to tightness of the constriction of the caliber of the gut. Others maintain that it simply indicates that, in a case of obstruction, the stenotic lesion is high in the small intestine. Albuminuria and hematuria have little diagnostic significance.

It is unfortunate that little can be learned by inspection of the feces, except occasionally in obstruction in the rectum or the descending and sigmoid colon, when the shape of the fecal masses may be of aid. Blood and pus in the stools, especially the former, have a limited significance. Small amounts of blood are discharged from the rectum in some cases of volvulus, but not in internal strangulation unconnected with volvulus, malignant disease or invagination. In invagination bloody stools are often a marked characteristic.

Leucocytosis is of possible value, when markedly developed within forty-eight to seventy-two hours after the beginning of obstructive symptoms. Its occurrence in various suppurative abdominal conditions without obstruction destroys its value, when found only at a later period.

Fever occurring early in a suspicious case tends to make logical the diagnosis of peritonitis rather than obstruction or strangulation. Its development later may be due to an incidental peritonitis complicating strangulation or any other form of obstruction, but it should be recollected that peritonitis may occur without fever.

The diagnostic value of peritoneal fluids obtained by aspiration, of intubation and inflation of the colon, of auscultation of the abdomen, of the antiperistaltic progress of minute particles from the rectum to the stomach, where they are found by lavage, and of the use of the *x*-ray to locate masses of dammed up feces made demonstrable by bismuth subnitrate should be tested in appropriate cases.

The diagnosis of obstruction is always a matter of supreme importance, because the patient must be relieved spontaneously or by treatment. Otherwise death will occur. Prompt relief is necessary in all cases, but promptness is absolutely essential in the crisis caused by strangulation. Often the diagnosis can only be made by a process of exclusion. If accurate diagnosis is unattainable, operation must be at once undertaken. Exploratory operation is frequently a confession of ignorlitmus stock This was the preparation of litmus that v Drigalski and Conradi employed With no other, according to Bassenge,[26] is there such a sharp differentiation of the color between typhoid and colon colonies During the early part of this investigation Petri plates of ordinary size were used, later the large plates (15 to 20 cm in diameter) as recommended by v Drigalski and Conradi, Hiss's method in our hands was far less satisfactory than that of v Drigalski and Conradi

Klinger[27] was able to isolate *Bacillus typhosus* from the stools in a much larger percentage of cases when he used the enriching malachite green method of Lentz and Tietz[27] than when he employed the blue agar of v Drigalski and Conradi Our attention was not drawn to the work of Klinger and Lentz and Tietz until the research as originally planned had been completed It was then decided to make another series of observations, employing malachite green media in addition to the v Drigalski-Conradi method Lentz and Tietz's agar was tried and also a new enriching method devised by Peabody and Pratt The malachite green methods failed to yield as good results as that of v Drigalski and Conradi This was probably due to the fact that the strains of the typhoid bacillus present in the intestinal contents of most of our cases were more susceptible to the inhibitory action of malachite green than our stock culture and the typhoid bacilli present in the cases studied by Klinger

For example, a large v Drigalski-Conradi plate inoculated November 27 from the feces of the patient Regan showed about 450 typhoid colonies This particular strain of *Bacillus typhosus,* although present in the feces in large number, failed to develop on the malachite green agar or in the malachite green bouillon There were nevertheless many bacteria in this specimen of feces that developed luxuriantly on the malachite green agar On the Lentz and Tietz agar plate at the end of twenty hours were about 250 discrete colonies of nearly uniform size, averaging about 2 mm in diameter, and a great multitude of minute colonies A v Drigalski-Conradi plate made from this green plate failed to show a single typhoid colony It is possible that the negative result in this case was due less to the inhibitory action of malachite green on the typhoid bacilli than to the presence of an unusually large number of fecal bacteria capable of developing on malachite green media Their growth may have choked the typhoid bacilli

When typhoid bacilli are found in the stools the possibility that they came from urine voided during defecation must be borne in mind Precautions should always be taken to avoid this source of error

RESULTS

1 Pratt in 1905 isolated *Bacillus typhosus* in 6 out of 43 cases—14 per cent

2 Pratt and Peabody in 1906 isolated *Bacillus typhosus* in 4 out of 31 cases—12 per cent

3 Pratt and Long in 1906 isolated *Bacillus typhosus* in 7 out of 26 cases—27 per cent

Total Bacillus typhosus isolated in 17 out of 100 cases—17 per cent

Twenty-one of the cases were examined during convalescence only All of them were negative If the febrile cases alone are considered, then the percentage of positive results is increased from 17 to 21 per cent The results in the first two series of examinations given above were obtained by the v Drigalski-Conradi method Pratt and Long used, in addition, the malachite green method Employing the same medium with which v Drigalski and Conradi obtained positive results in 100 per cent of the 50 cases they examined, we succeeded in isolating the typhoid bacillus in only 17 out of 79 febrile cases Failure to isolate *Bacillus typhosus* from the stools is usually attributed to a faulty method or to poor technic Our personal experience has convinced us that our low percentage of positive cases is due to the fact that in a great majority of the cases of typhoid fever that we studied the typhoid bacilli were either entirely absent from the stools or present in small number

In 51 cases 1 stool examined
In 23 cases 2 stools examined
In 12 cases 3 stools examined
In 8 cases 4 stools examined.
In 3 cases 5 stools examined
In 2 cases 6 stools examined
In 1 case 12 stools examined

Total number of stools examined, 206 The typhoid colonies were rarely present on the plates in large number In the case in which twelve stools were examined the first six were negative The following is a summary of the bacteriologic tests made in this case

Sadie F—November 7 (Sixth week of disease) v Drigalski Conradi plates negative

November 10 v Drigalski Conradi negative

November 14 v Drigalski Conradi negative Lentz and Tietz negative v Drigalski Conradi negative

November 16 Malachite green bouillon negative Lentz and Tietz negative v Drigalski Conradi negative

November 17 Malachite green bouillon negative Lentz and Tietz negative v Drigalski Conradi negative

November 19 Malachite green bouillon negative Lentz and Tietz negative v Drigalski Conradi negative

November 20 Temperature 98 8 Malachite green bouillon negative Lentz and Tietz positive, only three or four blue colonies *Bacillus typhosus* v Drigalski Conradi negative

November 22 Malachite green bouillon negative Lentz and Tietz negative v Drigalski Conradi negative

November 23 Malachite green bouillon negative Lentz and Tietz negative v Drigalski Conradi negative

November 24 Malachite green bouillon negative Malachite green agar negative v Drigalski Conradi negative

November 27 Temperature 103 6 Lentz and Tietz negative v Drigalski Conradi positive, seven blue colonies *Bacillus typhosus*

In all, 34 examinations were made by the three methods Only two of these were positive, once the Lentz and Tietz method and once the v Drigalski-Conradi Although thousands of colonies grew on the blue plates inoculated from these twelve stools, not over ten or eleven were typhoid colonies The examinations were made from fresh stools except in a few instances when the specimens were passed twelve to twenty-four hours previously In only one of our cases did typhoid bacilli persist in the stools in considerable number At the first examination made November 12, all three methods were negative The four subsequent examinations were all positive The detailed report is as follows

Banks—November 12 (End of second week) Malachite green broth negative Lentz and Tietz negative v Drigalski Conradi negative

November 15 Temperature 102 8 v Drigalski Conradi positive About twenty seven blue colonies *Bacillus typhosus* Malachite green broth negative for typhoid

November 16 Temperature 102 Malachite green broth negative Lentz and Tietz negative v Drigalski Conradi plate shows fifty blue colonies positive *Bacillus typhosus*

November 25 Temperature 100 2 Malachite green broth typhoid Lentz and Tietz negative v Drigalski Conradi positive, two hundred red colonies to seventy five large blue colonies *Bacillus typhosus*

November 27 Temperature 101 Lentz and Tietz negative v Drigalski Conradi positive, about thirty blue colonies *Bacillus typhosus* identify the bacilli he isolated, his results can not be accepted Merkel and Goldschmidt[3] Karlinski[4] and Wiltschaur[5] claimed they could demonstrate typhoid bacilli in the stools without difficulty Karlinski,[4] in 1889, stated that he obtained positive results in all of the 21 cases he examined As none of these investigators differentiated the micro-organisms they obtained from *Bacillus coli*, their observations are of no value It is interesting to note that Wiltschaur[5] was the first to state that the number of typhoid bacilli in the stools is very small Wathelet[6] showed that the methods of the earlier investigators were inadequate He made a bacteriologic examination in 12 cases of typhoid fever, and reported that he was able to isolate the typhoid bacillus in only 4 of them He studied about six stools from each patient He examined in all 600 colonies that developed on ordinary gelatin and only 10 of these were typhoid colonies Even his results can not be accepted as he did not state how he identified the micro-organisms he isolated as typhoid bacilli G Roux writing in Bouchard's *Traite de Pathologie* as late as 1896, stated that it was impossible to isolate *Bacillus typhosus* from the intestinal contents owing to the constant presence of large numbers of colon bacilli The first trustworthy work dates from the introduction of the glucose fermentation tests and the use of litmus-milk for differentiating colon and typhoid bacilli Since 1897 the agglutination test has been generally employed

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[26] Deutsche med Wochschr 1903, xxix 675

[27] Munch. med. Wochschr, 1905 xlix, 2159, Klin Jahrb 1905 xiv, 495

The first practical medium for separating typhoid from colon bacilli was the iodine-potato-gelatine of Elsner[7] The publication of his paper, in which he stated that by this new method he had isolated *Bacillus typhosus* from the stools in 15 out of 17 cases attracted much attention His method was used and indorsed by Brieger,[8] Grawitz,[9] Lazarus[10] and Sterling[11] in Germany by Pollak[12] in Austria, Jemma[13] in Italy, Chantemesse[14] in France, Horton-Smith[1] in England and Mark Richardson[16] in America Pollak,[12] Brieger[8] and Lazarus[10] obtained positive results in all the cases they studied The published reports of these investigators seemed to demonstrate the truth of the old theory that typhoid bacilli developed in enormous numbers in the intestinal contents of typhoid patients The theory advanced by Metchnikoff and Sanarelli[17] in 1894 seems to have attracted little or no attention They held that the typhoid bacilli only occasionally wandered from the spleen and mesenteric lymph nodes into the intestines The work of Brieger,[8] Chantemesse,[14] Lazarus[10] and Sterling[11] must be rejected, however, as these investigators did not clearly differentiate between typhoid and colon bacilli

Although the method of Elsner in the hands of some investigators yielded excellent results other bacteriologists found it unsatisfactory and failed to cultivate the typhoid bacillus in many undoubted cases of typhoid fever

The paper of Hiss,[18] in this country, and the monograph of v Drigalski and Conradi,[19] in Germany, seem to indicate that the failures of many earlier investigators to isolate typhoid bacilli from the stools were due to the lack of satisfactory methods Of 19 febrile cases at the New York Hospital, the typhoid bacillus was isolated by Hiss from the stools in 17, that is, 89 5 per cent, by his method Often the bacilli were present in large number Higley[20] obtained positive results in 20 out of 21 cases by the use of Hiss's medium v Drigalski and Conradi[19] cultivated the typhoid bacillus from the feces by their litmus-lactose-agar method in every one of the 50 cases of typhoid fever they examined The results of these bacteriologists must be accepted, as they fully identified the micro-organisms they isolated as typhoid bacilli v Drigalski,[21] in a later paper, stated that he subsequently examined cases in which he could not demonstrate typhoid bacilli in the stools even at the height of the disease Klinger[22] was able to isolate *Bacillus typhosus* from typhoid stools in only 25 out of 75 febrile cases (33 3 per cent) by the v Drigalski-Conradi method Krause and Stertz[23] in 33 out of 44 cases, Lipschutz[24] in but 1 out of 17 cases, and C Cole[25] in 2 among 21 All used the v Drigalski-Conradi method

Malachite green media check the growth of colon bacilli, while they allow the development of most strains of typhoid bacilli Klinger,[22] using malachite green agar as an enriching medium, isolated *Bacillus typhosus* in 26 out of 43 cases He examined 35 stools during the febrile period by four methods the v Drigalski-Conradi, the Endo, the caffein with biologic precipitation, and the enriching malachite green agar He succeeded by the simultaneous employment of all four methods in cultivating *Bacillus typhosus* 28 times from 35 stools, or in 80 per cent of the cases

Before attempting to reconcile the good results that early investigators obtained with imperfect methods and the comparatively poor results of Klinger, Krause and Stertz, Lipschutz and others with improved methods, a summary of our own work will be presented

METHODS

We have used for isolating *Bacillus typhosus* from the stools the v Drigalski-Conradi litmus-lactose plates, Hiss's media and malachite green enriching methods The medium of v Drigalski and Conradi permitted a sharp differentiation of typhoid and colon colonies The typhoid colonies were always bluish and usually small and translucent, looking like drops of dew Sometimes, however, the first generation of typhoid colonies grown from the feces were large (3 to 4 mm in size) and opaque Colon bacilli formed large, opaque, red colonies We have prepared the v Drigalski-Conradi medium many times, and the different lots have presented a uniform appearance, and typhoid and colon colonies have always grown in a typical manner

The failure of many bacteriologists to obtain a satisfactory medium depends on the fact that they did not use the right litmus We have employed only Kahlbaum's litmus solution, which is made according to the formula of Kubel and Tiemann from specially treated

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[3] Centrbl f. klin. Med. 1887 p 303
[4] Centrbl f Bakt. 1889 vi 65
[5] Centrbl f. Bakt, 1890 vii 279
[6] Ann. de l Institut Pasteur 1895 ix 253
[7] Ztschr f. Hygiene 1896 xxi 25
[8] Deutsche med. Wochschr 1895 xxi 835
[9] Centrbl f Bakt., 1892, xii 729
[10] Berliner klin. Wochschr 1895 xlix 1068
[11] Centrbl f. Bakt. 1897 xxii 334
[12] Centrbl f innere Med., 1896 p 785
[13] Münch med. Wochschr 1897 xxxiii 911
[14] Comp rend de la Soc. de Biol 1896 p 215
[15] Lancet 1899 p 1346
[16] Boston Med and Surg Jour 1903 cxlviii 152.
[17] Ann de l Institut Pasteur 1894 viii 193
[18] Med News 1901 lxxviii, 728
[19] Ztschr f. Hygiene, 1902 xxxix, 283
[20] Med. News, 1902 lxxx, 585
[21] Centrbl f Bakt. 1904 xxxv, No 6
[22] Inaug Disser, Strassburg 1904 republished in Arb a d Kaiserlich Gesundheit. 1906 xxiv, 35
[23] Ztschr f Hygiene, 1903, xliv 469
[24] Centrbl f Bakt 1904 xxv, 798
[25] Amer Med. 1906 xi 480

Jehle[41] observed a case in which there were no characteristic changes in the intestine, and yet the sputum contained typhoid bacilli Rau isolated *Bacillus typhosus* from the sputum when cultures from the stools were negative

Baumgarten years ago stated that the typhoid ulcers in the intestines should be regarded as metastases rather than as primary lesions This theory was revived in 1902 by Schottmuller [29] If the intestinal lesions were due to the action of typhoid bacilli in the intestine it is difficult to explain the absence of intestinal changes in cases of so-called primary typhoid cholecystitis [44] In these cases, in spite of the discharge of enormous numbers of typhoid bacilli into the intestine with the bile, there are no intestinal manifestations Not only are there no intestinal symptoms, but in a fatal case reported by Burlew[45] there were no typhoid ulcers in the intestine, although bile containing typhoid bacilli entered the duodenum freely In chronic typhoid bacillus carriers, although the typhoid bacillus may be the predominating micro-organism in the intestinal contents, no intestinal disturbances are produced and health is maintained

It is interesting to note in this connection that in a study by Wennagel[46] in Krehl's clinic, infiltration of the lymphatic tissue of the intestine was found not only in the second, but also in the third, fourth and even fifth week Necrosis and sloughing of the swollen Peyer's patches were observed as early as the second and as late as the seventh week He concluded that the characteristic typhoid symptoms are not the result of the intestinal lesions, but the two are co-ordinate Typhoid fever is thus a general infection in which intestinal alterations can occur Not only are there cases of typhoid fever without intestinal lesions, but Velich[47] has observed severe typhoid ulceration of the intestine without any disturbance of the health, in other words, without typhoid fever

In cases of infection during intrauterine life the portal of entry for the typhoid bacilli must have been the umbilical vein Yet in a case studied by Blumer[48] typhoid bacilli were found in the intestines

It is probable that the typhoid bacilli in the intestinal contents come chiefly from the bile There is no evidence that they are thrown off in large numbers from the ulcers as was formerly taught If so, one would expect to find an increased number in the lower part of the ileum, but Forster and Kayser,[49] as well as v Drigalski,[21] showed they were less abundant in the lower than in the upper portion of the small intestines Furthermore, v Drigalski was often unable to cultivate typhoid bacilli from the surface of the ulcers when they were present on the surrounding mucosa Councilman[50] says that he has not infrequently been unable to demonstrate bacilli in sections through the base of typhoid ulcers Mallory[51] found that histologically the lesions were diffuse and bore no intimate relation to the typhoid bacilli

Typhoid bacilli may be present in the intestinal contents in the usual number when the ulcers have entirely healed, as in a case reported by Jurgens [52]

The mesenteric and other lymph nodes exhibit hyperplasia and necrosis Curschmann[53] states that the bronchial lymph nodes are not infrequently markedly swollen in typhoid fever Even when intestinal lesions were absent the mesenteric lymph nodes, in some cases at least, have been enlarged Ulceration of the lymph nodules of the intestine is probably due simply to the exposure of the necrotic tissue to the action of the intestinal bacteria The lesions in the lymph apparatus of the intestine result, as do the lesions in lymphatic structures elsewhere, from the action of the bacteria or their toxins entering these tissues from the circulating blood and not to the invasion of the intestinal wall from its mucous surface

The sporadic occurrence of chronic typhoid bacilli carriers indicates that the harboring of typhoid bacilli within the intestinal tract for a long period of time depends on the host, not on a particular variety of the parasite In the study of typhoid fever in Strassburg, Brion and Kayser[54] found only three typhoid bacillus carriers among 200 typhoid patients The interesting case reported by Soper[55] of the New York cook who infected twenty-six or more individuals illustrates the same point If the ability to develop in the intestines depended on a peculiar property of the typhoid bacillus, then the individuals she infected would, in turn, have become typhoid bacillus carriers

The view that the persistence of typhoid bacilli in the stools is due solely to their retention in the gall bladder can not be accepted for the typical cases studied by v Drigalski,[21] Friedel[56] and others in which the typhoid bacillus are present in almost pure culture in the feces Typhoid bacilli, as has been pointed out, are present in the bile in practically every case of typhoid fever, and yet, as we have shown in many cases, they are not demonstrable in the stools In these typhoid bacilli carriers it would seem that either the normal bactericidal power of the intestinal wall is diminished or there is some other change that enables the typhoid bacillus to develop in the intestinal contents In some cases the typhoid bacillus has largely replaced the colon bacillus (Friedel)

Attention should be called to the fact that in a hemorrhagic stool we examined typhoid bacilli were present in enormous number It is evident that the blood shed into the intestine furnished favorable conditions for the growth of the typhoid bacillus The fact that in the next stool passed the same day no typhoid bacilli could be found supports our conclusion that ordinarily the typhoid bacillus does not develop in the intestinal contents In this opinion we are not alone Brion and Kayser's[54] observations have convinced them that the intestine is '*nicht der Vegetationsort*" of the typhoid bacilli It would seem that the number of typhoid bacilli in the intestinal contents must vary greatly in different epidemics of the disease This is a reasonable explanation for the divergent results obtained by different investigators who have studied the stools by approved methods Otherwise it is difficult to understand how Elsner,[7] Higley,[20] Pollak[12] and others were able to obtain positive results in a large proportion of their cases by the use of poor methods, while recent investigators working with superior methods have been able to obtain positive results in only a relatively small percentage of cases Hayashikawa[57] studied the occurrence of typhoid bacilli in the stools in Halle and in Prague

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[44] This is probably not a primary condition at all but secondary to a typhoid septicemia and represents an instance of typhoid infection in which the chief local lesion is in the gall bladder and not in the intestine

[45] Medicine 1903 ix 734

[46] Deutsch Arch f klin Med 1906 lxxxvii, 551

[47] Arch f Hygiene 1904 xlix 113

[48] The Journal A M A 1901 xxxv 1674

[49] Munch med Wochschr 1905, p 1475

[50] Personal communication

[51] Jour Exper Med 1898 iii 611

[52] Ztschr f klin Med, 1904, lii, 40

[53] Nothnagel's spec. Path u Therap 1898 227

[54] Deutsch Arch f klin Med 1906 lxxxv 532

[55] The Journal A M A 1907 xlviii 2019

[56] Ztschr f Med Beamte 1905 xviii 61

[57] Ztschr f Heilkunde 1903, xxiv (Inn Med), 19

Typhoid bacilli may be present in large number in one stool and absent in another stool passed a few hours later This was well shown in one instance after intestinal hemorrhage A black formed stool which was shown by the guaiac test to contain blood was examined Typhoid colonies made up from 70 to 90 per cent of the total number that developed on three v Drigalski-Conradi plates We have never seen such a preponderance of typhoid bacilli in any other stool. The next movement of the bowels consisted of formed masses which were brownish-black externally and yellow internally Four v Drigalski-Conradi plates were made Not a single blue colony developed Observations made in this case show how quickly typhoid bacilli can disappear from the intestinal contents and also that they develop readily when a favorable culture medium, such as blood, is present

All but one of our positive cases were still febrile at the time the typhoid bacillus was recovered from the stools It was found in all stages of the disease from the second to the thirteenth week Only one case was examined during the first week, as the patients almost invariably enter the hospital later in the disease Singularly enough, contrary to the theory expressed by Lipschutz[24] and others, no connection could be traced between diarrhea and the presence of typhoid bacilli It should be stated, however, that typhoid bacilli are present as often in normal solid movements as in unformed feces Some cases with marked enteritis, as indicated by the passage of fluid stools containing considerable mucus, occurring in small masses intimately mixed throughout the specimen, were examined with negative result[28]

We have demonstrated repeatedly that the number of typhoid bacilli in some stools must be very small if the micro-organism be present at all For this purpose fresh stools were taken from cases at the height of the disease and an unusually large number of plates inoculated. In one case twenty v Drigalski-Conradi plates were made from a thick fluid movement containing much mucus obtained from a patient with high fever Not a single blue colony developed on any of the plates Eleven plates containing Hiss's medium were also negative Eighteen blue plates from a single stool of another undoubted case of typhoid were likewise negative Dr Orton at the Boston City Hospital examined fifteen stools from one typhoid patient by Hiss's method without finding *Bacillus typhosus*

The fact that typhoid bacilli grew abundantly in the stools of one of our cases while they were absent in the majority of the cases may have been due to differences in the strains of the typhoid bacilli It is now known that different races of typhoid bacilli vary considerably one from another Our patients came not only from Boston, but from many towns in this part of the state and a few from distant places The patient in whose stools the greatest number of typhoid bacilli was found lived in Boston, but, of course, he may have been infected with a different strain of typhoid bacilli than any of the other patients

Through the kindness of Dr J Homer Wright we have been able to study the intestinal contents after death in one case Four days before death the stools were examined by the v Drigalski-Conradi method and no typhoid bacilli found At autopsy a blue plate was inoculated with a drop of bile and several hundred typhoid colonies developed, while two large plates inoculated with material from the first part of the jejunum did not yield a single typhoid colony Material from near the ileocecal valve as well as from the ileum 60 cm above the cecum was likewise negative Typhoid bacilli were obtained from the spleen, but not from the heart's blood

PATHOGENESIS

Typhoid fever must be regarded as a primary septicemia Schottmuller[29] pointed this out in 1902 The bacillus has been found in the blood repeatedly by the fourth day of the disease Kayser[30] cultivated the micro-organisms from the blood with his bile medium in 100 per cent of the 21 cases he examined during the first week Working with the Strassburg typhoid commission, Brion and Kayser had the opportunity to make several examinations during the incubation stage, and in no instance recovered *Bacillus typhosus* from the stools The typhoid bacilli quickly pass from the blood into the bile When the typhoid bacilli were injected into the ear vein of a rabbit we recovered the micro-organism the following day from the gall bladder Dorr[31] obtained *Bacillus typhosus* from the bile in less than eight hours after it had been introduced into the circulation Pratt[32] reported, in 1901, that the typhoid bacillus was cultivated from the gall bladder in 21 out of 30 cases of typhoid fever that came to autopsy at the Boston City Hospital

The micro-organism becomes widely disseminated throughout the body In one case Pratt recovered it from the heart's blood, the spleen, the liver, the kidney, a mesenteric lymph node, the gall bladder, the urinary bladder, the right middle ear, and the bone marrow It has been isolated from the urine in about 25 per cent of all cases examined (Jacobi,[33] Munch[34]) Petruschky[35] calculated that in one of his cases each c c of urine contained 172,000,000 typhoid bacilli, and Gwynn[36] estimated that 500,000,000 per c c were present in a case he reported A number of recent investigators have found typhoid bacilli more often in the urine than in the stools Among 98 convalescents studied by Herbert,[37] only three showed typhoid bacilli in their stools, while they were present in the urine of eighteen He found they occurred in the urine in large number, in the stools only in small number The presence of the typhoid bacilli in rose spots is well known It has been found repeatedly in the sputum when bronchitis was associated with the typhoid infection (v Stuhlern,[38] Richardson,[39] Dieudonne,[40], v Drigalski,[21] Jehle[41] and Rau[42]) Dieudonné recovered typhoid bacilli from the sputum seven weeks after fever had disappeared Undoubted cases of typhoid fever without intestinal lesions have been reported (Opie and Bassett[43]) green and added all sorts of green and then came back to the malachite until they got their methods right He does not feel that the old media would fail to give the typhoid bacillus when the Rogalsky media will When a man knows his medium, he can work with that better than with any other In his laboratory they work a dozen different cases with different media and come out the same because each one knows the medium he is working with Dr Park said that in the first place the laboratory man must get the feces early If six hours elapse one will not get the bacilli It shows how the feces in a short time destroy the bacilli Milk makes the bowel contents more suitable for the preservation of the typhoid bacilli until passed externally He said that different results are often obtained in different epidemics Dr Park's theory has been that the bacilli are in the mesenteric glands and Peyer's patches, from which they passed through into the blood and remained in the blood a certain time before dying, because very few of them are found in any cubic centimeter of blood He thinks that it is rare to find five or six or ten in that quantity In attempting to make the diagnosis from the feces he and his confrères had results not quite so discouraging as Dr Pratt One sample was mislaid and turned up in ten days It had fermented and run out of the bottle into the paper covering it Dr Park examined it and found it almost a pure culture of typhoid bacilli The feces in that person had been a suitable medium

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[28] To answer the inquiry of Dr W H Park made when this paper was presented (see discussion at end of the paper) the effect of diet has been studied and found to have little influence on the occurrence of typhoid bacilli in the feces. There are two medical services in the Massachusetts General Hospital Patients in the wards of the East service are allowed a liberal diet, while on the "West side the ordinary milk diet is given. Nearly an equal number of positive cases were obtained from the two services, nine from the 'East" side and eight from the West.'

[29] Münch. med Wochschr, 1902 xlix, 1561.
[30] Münch med Wochschr 1906, liii 823
[31] Wien klin Wochschr, 1905, xviii 884
[32] Amer Jour Med. Sci, 1901 cxxii 584
[33] Deutsch. Arch f klin Med., 1902 xxii, 442
[34] Semaine Med. 1904 xxiv 121
[35] Centrbl f. Bakt. 1898 xxiii 577
[36] Johns Hopkins Hosp Bull 1899 x 109
[37] Münch. med. Wochschr, 1904 xi 472
[38] Centrbl f. Bakt 1900 xxvii, 354
[39] Boston Med. and Surg. Jour, 1897 cxxxvii, 433
[40] Centrbl f. Bakt. 1901 xxx 481
[41] Wien klin Wochschr 1902, xv 232
[42] Ztschr f. Heilkund 1904 xxv (Inn. Med.) 385
[43] Johns Hopkins Hosp Bull, 1901 xii 198

Dr A L Benedict, Buffalo, said that in some experiments with typhoid on the theory that the patient should be fed liberally with cereals as well as milk, and also using treatment along the line suggested by Bouchard, giving animal charcoal and antiseptics The favorable results have made him consider that clinical typhoid is typhoid plus colon bacillus infection of the intestine, and that from a purely clinical standpoint a typhoid patient who is well fed, who is not milk poisoned, so to speak, and whose toxins are absorbed from the canal by charcoal or restrained by an antiseptic, presents a course of about two weeks and a half, is practically never delirious, shows no marked dangerous symptoms at any time and shows no tendency to hemorrhage or lung involvement Dr Benedict has not had a large experience with this treatment, but what he has had is sufficient to suggest that it might really be worth while to go over these cases jointly with pathologists and see how much of clinical typhoid is really typhoid and how much of it is color bacillus infection The fact that cases that appear clinically like typhoid and abort, or proceed through a course typical of typhoid, are shown to be due to bacilli intermediate between the colon and the typhoid bacillus, is significant in this connection

Dr H G Beck, Baltimore, said that the result of Dr Pratt's studies naturally suggests the influence that dietetic treatment may have on the development of typhoid organisms in the intestines In pointing out the relative frequency of typhoid bacilli in the urine as compared to their occurrence in the stools it strikes one that the administration of urinary antiseptics is vastly more important than the administration of intestinal antiseptics And, furthermore, on account of their more frequent and persistent presence in the urine, it emphasizes the urgent necessity of safeguarding the public by careful instruction to typhoid convalescents, warning them of the danger of spreading typhoid, if they are promiscuous in their habits of voiding urine, or fail to use proper urinary antiseptics

Dr J H Pratt, Boston said that the point Dr Park brings up in regard to the possible relation of diet to the occurrence of typhoid bacilli in the stools is important It is possible that a strict milk diet may influence the growth of *B typhosus* considerably As some patients have been on a strict milk diet and others under the care of physicians who employed Dr Shattuck's liberal diet, Dr Pratt thinks that there is a sufficient number of cases to throw some light on this problem In answer to Dr Benedict's question, he stated that this study has a direct bearing on the use of intestinal antiseptics in the treatment of typhoid fever The typhoid bacilli multiply in the tissues of the body not in the intestines In only one of their hundred cases were the bacilli found persistently in the feces in considerable number Through the natural defenses of the body the myriads of typhoid bacilli eliminated with the bile are quickly destroyed in the intestines. In the case of typhoid "bacillus carriers," the attempt to free the stools of this micro organism by the administration of the so called intestinal antiseptics has failed utterly Few undoubted cases of infection of the blood with the colon bacillus in typhoid fever have been reported Blood cultures which have been employed so extensively in the diagnosis of typhoid fever have shown the rarity of colon septicemia

Special Article

THE LITERARY SIDE OF A PHYSICIAN'S LIFE —RONALD ROSS AS A POET

S WEIR MITCHELL, M.D
PHILADELPHIA

"In Exile, by R R, 1906, Privately Printed," is the wording on the title page of a little book, whose anonymous author says "These verses were written in India between the years 1891 and 1899, as a means of relief after the daily labors of a long, scientific research"

I am at liberty to say that the author is Ronald Ross, sometime an English army surgeon, and now professor of tropical diseases in the Liverpool University The story of the years which step by step led to his final and convincing proof of the causal relation of the mosquito to malarial disease, is to be found in his Nobel lecture given at Stockholm It is a sad account of labor in the terrible heats of India when the sweat from his forehead rusted the screws of his microscope, or when for days the congested eyes of overuse forbade all study

His lecture tells modestly of the difficulties this amazing research encountered In any climate and under the most indulgent conditions, what he did would have been remarkable In India the lack of sympathy on the part of his military superiors, abrupt army orders, limited means and absence of help seemed ever ready at his happiest approach to success to mock him with delays He must have felt as if, at times, some malign fate stood ready with obstacles over which no energy, no self assurance of ultimate victory could prevail I know of no medical story more interesting, no research which so surely found what it exacted, that heroism back of which lay energizing sense of duty

The story of this adventurous research has yet to be fully told, as Ross will never tell it In his lecture and essays he does justice to all concerned, but his was the final victory, the convincing proof I allude to it here only to present Ronald Ross under another point of view The weary physician, the exhausted laboratory worker has had a variety of ways of resting or relieving his mind Physical exercise, some fad of collecting this or that may suffice, but it is an almost unnoticed truth that merely to change the mode of use of the mind competently rests and refreshes The subject is a tempting one An apt illustration is the fact that Ronald Ross, when half blind or exhausted with work, turned to verse and sought in a difficult field for the relief that change of mental occupation affords, for the making of good verse is not an easy occupation, as several of the greatest poets have confessed[1]

This little book is an interesting record of moods of mind, of hope, despair, sorrow and final triumph It gives one a vivid conception of the effects of exile, personal losses and the torment of tropical conditions on a man with an imagination of high order, somewhat lacking for use in verse that which only much technical training can supply

There are many verses in this book which exacting self criticism might have altered or left out There are some easily amended defects of rhythm—verses which are needlessly obscure, but these concern me little There are many quatrains of virile power, descriptions of eloquent force or notable passages of insight and deep feeling

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[1] Byron Matthew Arnold and others

He concluded that in the type of typhoid fever present in Germany more typhoid bacilli are present in the stools than in the cases that occur in Bohemia

In our fatal case v Drigalski-Conradi plates made from different portions of the intestine showed that the great number of typhoid bacilli that entered the duodenum with the bile were destroyed so speedily that none could be demonstrated in the upper part of the jejunum Forster and Kayser[40] noted that there were more typhoid bacilli in the duodenum than in the ileum A table published with their paper shows that in one case they found typhoid bacilli absent in the jejunum, although present in the duodenum They made no comment on this remarkable observation v Drigalski[21] found in all his cases that the typhoid bacillus occurred in pure culture in the duodenum Cushing and Livingood[58] demonstrated several years ago that the normal bacterial flora of the human stomach and duodenum was very meager Rolly and Liebermeister[59] recently showed that the wall of the duodenum in the rabbit has marked bactericidal power

Although v Drigalski found typhoid bacilli present on the inner surface of the stomach in every case he examined at autopsy, it is difficult, in view of the bactericidal power of the gastric mucosa, to believe that the portal of entry of the typhoid bacillus is through the wall of the stomach Curschmann,[53] however, endorses the view of Stern and Hamburger that the typhoid bacilli are so resistant to weak acids that they are probably able to live in the stomach [60]

It will be seen that these observations harmonize with one another In the light of this new knowledge, it can readily be seen that the old theory that the intestine is the portal of entry of the typhoid bacilli can no longer be accepted unless additional evidence can be produced in its favor If the duodenum is able to destroy the great number of typhoid bacilli that enter with the bile, how is it possible that the relatively few micro-organisms contained in the infected food are able to pass through the duodenum alive and gain an entrance into the body through the solitary lymph nodules and Peyer's patches of the lower part of the ileum? In regard to the place and mode of entry of the typhoid bacilli nothing definite is known aside from the fact that some part of the alimentary tract is infected Forster has suggested that typhoid bacilli may enter the body through the tonsils Brion and Kayser found paratyphoid bacilli, and v Drigalski typhoid bacilli, in the tonsils These observations aid but little in the solution of this problem, inasmuch as typhoid bacilli have been found in many organs of the body In the instances cited, entrance to the tonsils from the blood can not be excluded

CONCLUSIONS

Typhoid fever is a general infection The typhoid bacillus is an invasive micro-organism It is able to develop in the blood and the tissue-juices of the body It does not develop in the intestinal contents except under unusual conditions It more frequently occurs in large number in the urine than in the feces The gall bladder is a favorite habitat of the typhoid bacillus and it develops luxuriantly in the bile The typhoid bacilli in the intestine come in large part from the bile They are rapidly destroyed in the duodenum and jejunum, and it has recently been shown that the wall of this portion of the intestine has marked bactericidal power It is probable that destruction of all the typhoid bacilli that enter with the bile rarely occurs in the lumen of the bowels The number, however, becomes so greatly diminished that their presence can not be demonstrated in the stools of many patients with typhoid fever Employing the most approved methods for isolating *Bacillus typhosus* from feces we were able to recover this micro-organism in only 21 per cent of the febrile cases Usually when present they occurred only in small number They were found in greatest number in a stool containing much blood It is not improbable that if there was a method that permitted the bacteriologic examination of the entire stool for typhoid bacilli as has been devised for detecting the presence of cholera bacilli, a few micro-organisms might be found in every stool This, however, would not affect our conclusion, that the typhoid bacillus does not find conditions favorable for its growth in the intestinal contents It is demonstrable in the feces in such a considerable proportion of cases because it is eliminated in great number by the bile It is also not infrequently excreted in the urine and sputum, and it may be found in these secretions when absent from the stools The portal of entry of the typhoid bacillus is not known There is no more evidence in favor of entrance through the intestine than through the tonsils or the gastric mucosa

STATISTICS COLLECTED FROM THE LITERATURE* IN REGARD TO THE OCCURRENCE OF TYPHOID BACILLI IN THE STOOLS OF TYPHOID PATIENTS

Investigator	No of cases examined	Method Employed	No of cases in which *B typhosus* was isolated
Birt	5	Caffein	0
Clauditz	8	v Drigalski Conradi s	2
Cole, C	21	v Drigalski Conradi s	2
Courmont and Lacomme	8	Caffein	0
v Drigalski and Conradi	50	v Drigalski Conradi s	50
Elsner	17	Elsner's	16
Ficker and Hoffmann	11	Caffein	11
Gabritschewsky	2	Gabritschewsky s	1
Gebauer	10	Piorkowski s	12
Grawitz	8	Elsner s.	2
Hayashikawa	20	Piorkowski s.	12
Higley	20	Hiss s.	20
Hiss	108	Hiss s	46
Horton Smith	16	Elsner s.	4
Jemma	83	Elsner s.	30
Klinger	†75	v Drigalski Conradi s	25
Klinger	75	Endo s	38
Klinger	43	Lentz and Tietz s malachite green	26
Krause and Stertz	44	v Drigalski Conradi s	23
Lentz and Tietz	205	Lentz and Tietz s malachite green	150
Lipschütz	17	v Drigalski Conradi's	1
Mackenna	8	Piorkowski s.	8
Piorkowski	4	Piorkowski s.	4
Pollak	20	Elsner s.	20
Richardson	13	Elsner s	10
Schütze	5	Piorkowski's	5

DISCUSSION

DR. W H. PARK, New York, said that it is a very simple thing and yet a very important one to have proper materials for the medium Dr Park and his co-workers started with malachite

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[58] Contributions to the Science of Medicine dedicated by his pupils to W H Welch Baltimore 1900 p 543

[59] Deutsch Arch. f. klin. Med 1905 lxxxiii, 413

[60] For literature on this subject see Krehl Pathologische Physiologie vierte Auflage, Leipzig, 1906, p. 302.

* In addition to the references cited elsewhere, the following may be consulted
Birt Brit. Med. Jour Oct. 28 1905 p 1111
Clauditz Hyg Rund. 1904 xiv 718
Courmont et Lacomme Jour de physiol. et de pathol générale, 1904 xvi 287
Ficker und Hoffmann Arch f Hygiene 1904 xlix, 257
Gabritschewsky Ztschr f Hygiene 1900 xxxv, 104
Gebauer Fortschr d Med 1900 ii 21
Mackenna Edinburgh Med Jour 1899 vi 399
Piorkowski Berliner klin Wochschr 1899 p 145
Schütze Ztschr f, klin Med., 1899, xxxviii, 39
† Febrile

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[For other information see second page following reading matter.]

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ASEPTIC SUPPURATION IN RELATION TO ACUTE PLEURITIC EFFUSIONS

We recently[1] called attention to the important studies of Opie on the conditions under which the leucocytes are able to accomplish their digestive functions and the mechanism by which their activity is held in check. Apparently the finely granular leucocytes contain an enzyme (*leucoprotease*) which is quite different from the protein-digesting enzymes of all the other cells of the body, for the leucocyte enzymes act best in an alkaline medium, while the enzymes of the mononuclear leucocytes and of tissue cells in general are active only in slightly acid solutions. These proteolytic enzymes are held in check under ordinary conditions by the action of the blood serum, which contains some substance which effectively inhibits their activity. If, however, there is an excessive accumulation of leucocytes in a localized area the amount of leucoprotease may be greater than can be inhibited by the relatively small amount of serum present in the same area. As a result the leucocytes undergo self-digestion, the fibrin and dead tissue in the same area will also be digested, and the condition of suppuration is provided. Consequently any condition that causes the presence of large numbers of leucocytes in a circumscribed area where there is necrosis will cause suppuration, and pyogenic bacteria are pyogenic simply because they have at one and the same time necrogenic and chemotactic effects. As we previously pointed out, the injection of chemotactic substances, like iodoform emulsion, into necrotic tissues, such as occur in tuberculous infections, may cause an aseptic suppuration which is often erroneously attributed to pus infection through faulty technic.

On the other hand, there may be accumulations of leucocytes without suppuration when there is present also a large quantity of serum to inhibit them. For example, Opie found[2] that the well-known effect of turpentine in producing suppuration when injected subcutaneously is not usually observed when the turpentine is injected into the pleural cavity, because there is here exuded so much serum that the leucocytic enzymes are held in check. By drawing off most of the serum during the acute stage of the resulting inflammation it was possible to leave the balance in favor of the leucocytes of the exudate, so that they were able to cause a suppurative softening of the fibrin adherent to the pleural surfaces.

These experiments are certainly full of suggestion for the clinician, indicating as they do the possibility that removal of the serous fluid from the chest cavity during the acute stage of a pleuritis may convert a simple serofibrinous into a purulent exudate. Is it not possible that empyema following aspiration of the pleural cavity under careful aseptic precautions is due sometimes to such removal of inhibiting serum, rather than to contamination by the aspirating needle? The analogy to the aseptic suppuration of the tuberculous focus injected with iodoform is a close one. It should be added that Opie found that after the acute stage of the pleural inflammation the number of leucocytes is greatly decreased, so that removal of the serum would then not be likely to lead to suppurative changes in the manner described above.

THE CEREBROSPINAL FLUID IN PARESIS

The remarkable amount of work which has been done on the cerebrospinal fluid in the past few years may be imagined when it is stated that Kaupe was able to find references to 487 articles bearing on the subject published during the last three years. It is only since 1901, as Cornell[1] points out, that lumbar puncture has been generally used by the neurologist and the psychiatrist, though the worth of the procedure was pointed out by Quincke ten years previously. It is fair to state, however, that since Quincke's original work, considerable modifications in the methods of examination have come into vogue, so that at present an examination of the spinal fluid usually consists of a cyto-count, an estimation of the pressure of the fluid, and a determination of the proteid content. Of these three procedures the cyto-count, which includes an estimate of both the number and variety of cells, is most important. Next in importance comes the albumin determination, and finally the estimation of pressure.

A few words on the technic of the cyto-count may not be amiss, for past experience has shown that imperfections in the technic have been responsible for a lack of uniformity in results. The routine practice until recently has been to centrifugalize the fluid, especially when it is clear, as it is in diseases like tabes and general paresis. It is obvious that the process of centrifugalization introduces serious errors into the computation of the cells, for in order to produce comparable results all observers would have to centrifugalize the fluid for the same period of time and at the same rate of speed. Even if this were possible the subsequent manipulations of decanting and spreading could hardly be made uniform enough to form a fair basis for comparison. Furthermore, the process of centrifugalization produces distinct changes in the cells, altering the shape,

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[1] The Journal, April 20, 1907, p. 1354.

[2] Jour. Exp. Medicine, 1907, IX, p. 414.

[1] Amer. Jour. of Insanity, July, 1907.

To do justice, quotations should be long, and it is difficult to choose and out of the question to ask the space I should ask in a literary journal Professor Da Costa wrote years ago an address on the physician in literature and told us, if I am correct in my remembrance, all there was then to say of the physician as a poet It is fitting that in this, our great journal, there should be recognition of another to whom must be given the double laurel of science and poetry

The first lines I quote strike the lofty note of very personal verse

This profit yet remains
  Of exile and the hour
That life in losing gains
  Perhaps a fuller flower

For on this desert soil
  A blessing comes unsought—
Space for a single toil,
  Time for a single thought

In humble ways I move
  Myself to little things,
The heated hands I prove,
  I watch the light that springs

Or fades in fevered eyes,
  My only solace here,
Not to be rich or wise
  But to have done with fear

God sees the silent space
  Where footstep never trod,
And in the lonely place
  The listener is God

An appeal to this alien sea to sing to him of his English home is a passage of poetic beauty too long to quote, and I content myself unwillingly with this apostrophe to the Indian East and its plague of dust

O silent sepulchre,
  Great East, disastrous clime,
O grave of things that were,
  O catacombs of time,

Dust—thou art dust, thy sun,
  Thy lord and lord of dust,
Doth stamp thee into one
  Great plain of dust, and dust

Thy heavens, thy nights, thy days,
  Thy temples and thy creeds,
Thy crumbling palaces,
  Thy far forgotten deeds—

Infinite dust Half living,
  We clothe ourselves in dust
And live, not to be living,
  But only that we must

The terrors of an East Indian storm, "when great clouds overhead hold high debate of thunder," and at last comes the eagerly desired rain, are so told as to grieve me that I may not quote all of it

O wilderness of death,
  O desert rent and riven,
Where art thou?—for the breath
  Of heaven hath made thee Heaven

I know not now these ways,
  The rocky rifts are gone,
Deep verdured like the braes
  Of blest Avilion

Here where there were no flowers
  The heavenly waters flow,
And through a thousand bowers
  Unnumbered blossoms blow

Then follow the verses written on the day when he found the zygotes and the final key which makes it possible to lock the Pandora box of malarial maladies One envies him this hour of victory

This day relenting God
  Hath placed within my hand
A wondrous thing, and God
  Be praised At his command

Seeking His secret deeds
  With tears and toiling breath
I find thy cunning seeds,
  O million murdering Death.

I know this little thing
  A myriad men will save.
O Death, where is thy sting,
  Thy victory, O Grave!

Before Thy feet I fall,
  Lord, who made high my fate,
For in the mighty small
  Is shown the mighty great

Clinical Note

A SIMPLE PROOF OF THE CESSATION OF RESPIRATION

MARSH PITZMAN, M D
ST LOUIS

In the receiving room of the St Louis City Hospital the ambulances bring in many patients dead, or apparently so, and it is my duty to determine quickly and definitely whether or not a patient is still living These patients are pulseless and there is no visible sign of respiration They appear extremely pallid, the pupils are dilated and there are the other signs of probable death For the final proof we turn to the respiration For some reason our reception room was not supplied with a mirror for the familiar breath test, so I was forced to a substitute

The mouth is closed by hand and then the anterior nares of both sides are filled and covered with fine soapsuds If respiration has ceased there is absolutely no movement of the bubbles As it is evident that a patient can not live without breathing, this test continued for a few minutes is an absolute proof of death

This test is everywhere possible and is more simple and more reliable than the mirror test

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Medical Treatment of Otitic Pyemia.—A recent communication from Politzer's clinic reports operative treatment in 45 cases of otitic pyemia The jugular vein was ligated and the thrombosed transverse sinus was exposed and evacuated The fistula into the jugular allows such good drainage that the danger of meningitis is materially reduced Thirty-four of the patients recovered, 69 and 78 per cent in the two series. The exclusion of the jugular vein before the operation on the bone seems to reduce the danger of the dissemination of infectious germs from the ear The jugular vein is now ligated in the clinic as a routine procedure when pyemic fever and chills suggest the possibility of an otitic sinus affection It has been found especially useful with thrombi adherent to the walls of the sinus, as there is special danger of the loosening of septic particles from the thrombi and their being swept along into the lungs or elsewhere and inducing metastasis Even when the sinus is completely obstructed by thrombi, ligation of the jugular vein prevents aspiration of air into the vein Politzer says that any one can ligate the jugular without trouble after a little practice on the cadaver the use of antitoxin than the work on the guinea-pig indicates, for here one is dealing with an early and malignant form of experimental postdiphtheric paralysis This grave variety fortunately is rare in man Further, the entire charge of the poison is injected directly into the tissues of the guinea-pig, while in man the toxin is doubtless elaborated more slowly We may assume, therefore, that antitoxic serum, given at a somewhat later period than in the work on guinea-pigs, would exert beneficial effects The fact that one unit of antitoxin prevents paralysis and saves life when administered early, whereas 4,000 units totally fail when administration is delayed forty-eight hours, emphasizes the importance of using this remedy early

YELLOW FEVER ON THE ISTHMUS OF PANAMA UNDER THE FRENCH REGIME

Col W C Gorgas, U S Army, chief sanitary officer of the Isthmian Canal Commission, publishes some interesting statistics as to the population and deaths from various diseases in the city of Panama from 1883 to 1906 and among the employés of the French Canal Company from 1881 to 1904[1] The figures are given without comment, and only those relating to yellow fever will be considered here

In the first place it appears that yellow fever is by no means always present in Panama, at least in a fatal form, thus in the years 1890, '94, '95, '96 and '98 no deaths from that disease were reported, and in 1892 and 1893 only one death each year, in the five consecutive years from 1892 to 1896 inclusive there were only two deaths and for three consecutive years no death Among the employes of the French canal companies there were a large number of deaths from yellow fever every year from 1881 to 1889, in which latter year the force employed was greatly reduced From 1881, when the force was about 1,000, the number of employes steadily increased until it reached a maximum of some 19,000 in 1884, and was maintained at 15,000 to 17,000 until the end of 1888 and the beginning of 1889, the maximum number of deaths from yellow fever in any one year, 308, occurred in 1886 From 1890 to 1895 inclusive the number of employés ranged from 700 to 900, in 1895 it increased to 1,400, in 1896 to 3,700, and was maintained at about that figure until 1899, 1900 and 1901, when it was about 2,000, in 1902 a further reduction to about 1,000 occurred, and this force was maintained until the transfer to the American company in 1904

Now the interesting point is that notwithstanding the French companies knew nothing about the method of transmission of yellow fever, and the present scientific methods of prevention, there were two periods of six consecutive years each when there were no deaths from yellow fever, 1891 to 1896 inclusive and 1898 to 1903 inclusive, and fourteen consecutive years, 1890 to 1903 inclusive, during which time there were only seven deaths, one in 1890 and six in 1897, and this notwithstanding that there were 454 deaths from yellow fever in Panama in the five years period, 1899 to 1903 inclusive No explanation of these remarkable figures is given by Colonel Gorgas

FEW APPLICATIONS FOR THE MEDICAL CORPS OF THE ARMY

We understand that for the examination held July 29 to fill vacancies existing in the medical department of the Army there were only twenty-six applicants Of these, twelve withdrew after they had made themselves acquainted with the professional and physical qualifications required, fourteen completed the examination, and of these only three were successful At the previous examination, held April 29, there were seven successful applicants, thus making a total of ten who passed the preliminary examination and will enter the Army Medical School in October for special instruction required before they receive their commissions in the corps It thus appears that the experience of last year and the preceding years is only repeated The number of vacancies occurring each year is greater than can be filled from the list of candidates who present themselves There is no prospect that this condition of affairs will improve until Congress passes legislation, which has so often been urged, to increase the inducements to young medical men to enter the Army medical service It is hoped that Speaker Cannon, who is responsible for the defeat of the medical department reorganization bill, will at the next session of Congress see the grave injustice he has done and allow the bill to pass

NEWSPAPER PRESCRIBING

Newspaper prescribing obtains in many places, but some of the most shameless examples of it that we remember to have seen are to be found in the *Philadelphia Record* In a recent issue of that journal this abuse is all the more flagrant in that it follows under the heading "Health and Hygiene," immediately after the official vital statistics, thereby acquiring in the minds of the thoughtless or less well-informed a fictitious authority Prescriptions are published for twenty-eight applicants, on account of conditions which, so far as may be judged from the crude descriptions of the patients, range from simple "constipation" and "nervousness" to cardiac and other serious troubles A noticeable feature is the fact that the writer recommends exceedingly potent drugs, which should never be used for self-doctoring or even be ordered by a physician for a patient who is not under his immediate observation, for instance, salts of strychnin are recommended in no less than eleven cases Fancy ordering a hundred 1/40 grain tablets of strychnin sulphate to be put into the hands of and probably the staining reactions, of some, and breaking up the more delicate ones The more recent method of using the pipette of the blood counter, mixing the undiluted spinal fluid with a staining reagent, and counting in a Turck or specially constructed chamber, does away to a great extent with the disturbing factors inherent in the centrifugal method

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[1] Population and deaths from various diseases in the City of Panama by months and years from November 1883 to August 1906 Number of employes and deaths from various diseases among employes of the French Canal Companies by months and years from January 1881 to April 1904 W C Gorgas colonel medical corps U S Army chief sanitary officer Washington Government Printing Office 1906

The value of examination of the spinal fluid in general paresis, provided the proper technic is followed, has been well shown recently by Cornell The procedure is of value for two main reasons, one being that an increase in the cells of the spinal fluid is practically always present in paresis and usually absent in the conditions which simulate it, the other being the fact that these changes occur early in the disease, at a time when every scrap of evidence bearing on the nature of a doubtful case is of value Cornell found that while in normal spinal fluid only from 1 to 4 cells per cubic millimeter are present, in paresis from 12 to 200 or more are found Small lymphocytes are the most common type of cell, and constitute in many instances from 45 to 95 per cent of the total. Polynuclears are found next in frequency and are apt to be especially abundant after convulsive seizures Usually, therefore, but not invariably, the cyto-count of general paresis shows a lymphocytosis Spinal fluids resembling those of general paresis, i e, showing lymphocytosis and a high proteid content, may be found in cerebral lues, some cases of tabes, and in multiple sclerosis, but are not found in arteriosclerotic psychoses, chronic delusional states, alcoholic psychoses, mania, epilepsy, dementia præcox and the psychoneuroses Here, as in other tests, a negative finding may be as valuable as a positive one, and the absence of an increase in the cells of the spinal fluid, especially if present at several examinations made at intervals, is very strongly against general paresis

The question of the origin of the cells in spinal leucocytosis is one which has led to much discussion Doubtless the centrifugal method caused confusion by distorting the cells This distortion led to the belief that the cells in the fluid did not come from the blood vessels involved in the paretic process The use of the undilated and uncentrifugalized fluid seems to show that this is a fallacy, that many of the cells in the fluid are similar to those in the perivascular spaces, and that there is generally a correspondence between the leucocytes of the blood and those of the spinal fluid This is what would be expected

So far as paresis is concerned, there seems little doubt then that lumbar puncture is of value in early diagnosis The value of the negative finding, and the early appearance and constancy of the positive one must be borne in mind But no results are of value unless based on a careful technic The procedure requires time and the necessary experience, for, after all, though many wish to regard laboratory methods as short cuts to diagnosis, they usually consume much time and are just as capable of correct or incorrect technic and interpretation as ordinary physical signs

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ANTIDIPHTHERIC SERUM AND POSTDIPHTHERIC PARALYSIS

Since the introduction of the serum treatment of diphtheria the question of the relationship between this therapeutic procedure and postdiphtheric paralysis has been frequently agitated As is well known, many have charged to the antitoxin treatment a share in the responsibility for the sequel, some claiming that the paralysis is a direct consequence of the deleterious action of the serum, and it has even been asserted that this sequel is more common in patients treated with antidiphtheric serum than in those treated otherwise

Rosenau and Anderson,[1] with the excellent facilities afforded in their laboratory, attacked the problem from the experimental side, first presenting the views of clinical statisticians to the effect that antitoxin treatment does not make paralysis more liable to ensue Guinea-pigs were chosen as subjects for their tests, and paralysis apparently identical with that seen in human beings was induced by a partially neutralized mixture of diphtheria toxin and antidiphtheric serum, so adjusted as to leave the toxon or paralysis-producing constituent of diphtheria toxin free to exert its specific action on the nervous system Of course it must be admitted that this laboratory artifice may not exactly reproduce what happens in spontaneous diphtheric infection in man, notwithstanding the symptomatic identity of the affection But even with this, the not uncommon allowance when a laboratory device attempts to reproduce Nature's phenomena, the conclusions reached by Rosenau and Anderson are full of valuable suggestions

It is shown that in the guinea-pig antitoxin can not influence the diphtheric paralysis after the paralysis has appeared, and that it has no influence in preventing postdiphtheric paralysis if injected shortly before the paralysis develops, but given twenty-four hours after the infection it can save the life of the guinea-pig and greatly modify the paralysis Antitoxin given in a single large dose forty-eight hours after the infection did not modify the paralysis or save life, 4,000 units failed to modify the paralysis or save the life of guinea-pigs weighing about half a pound Weight for weight, this corresponds to 400,000 units for a fifty-pound child Antitoxin given in repeated injections beginning twenty-four or forty-eight hours following infection seemed to have a more favorable effect on the subsequent paralysis than a single injection, while a very small quantity (one unit) of antitoxin given twenty-four hours before or at the time of infection prevented the development of paralysis

In man one would expect more favorable results from tion that the slowness of hearing to which the young woman was subject might be due to a deflection of the impulse from the auditory center to the region concerned in the sense impressions of the mouth So far he has been unable to substantiate this by showing any consistent augmentation of the gustatory sensations with the periods of increased slowness of sound perception However, there is nothing in the case to refute the so-called "psychologic theory" of such phenomena, which regards them as due to persistent association

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[1] Hygienic Laboratory U S Public Health and Marine-Hospital Service Bulletin 38, June 1907

Medical News

CALIFORNIA.

Cleanse County Hospital —The San Francisco Board of Health has decided thoroughly to cleanse and disinfect the City and County Hospital, and to wage a war of extermination on the fleas and rats in the institution The buildings will then be thoroughly cleansed and disinfected

Plague Situation —From August 12 to 29, inclusive, nine cases of plague have been reported in San Francisco, with six deaths Two of the patients were sailors from coasting vessels, while the other cases occurred in hospitals and other parts of the city No new cases have since developed

Hospital Notes —The new Siskiyou County Hospital at Yreka is to be erected immediately at a cost of $19,550 for the building alone The structure will be two stories high and will contain 24 rooms——Dr Herbert P Barton has been granted a permit for the Clara Barton Hospital in Los Angeles

Vital Statistics for July —During July there were reported 2,190 births and 2,540 deaths, equivalent to an annual rate per 1 000 of 12 09 births and 14 09 deaths Of the deaths reported, 380, or 15 per cent, were from diseases of the circulatory system, and 367, or 14 5 per cent, from tuberculosis There were 240 deaths from diseases of the nervous system, and 184 from disease of the respiratory system Deaths from epidemic diseases were as follows Typhoid fever, 54, diphtheria, 34, whooping-cough, 22, measles, 17, influenza, 8, and scarlet fever, 7

Personal —Dr John A Randolph, Willows, has been appointed health officer of Glenn County, vice Dr William Thurston resigned——Dr Edwin H Wiley, Los Angeles has been appointed assistant police surgeon——Dr R G Broderick has been appointed warden of the San Francisco City and County Hospital, vice Dr John V Hughes——Dr J DeBarth Shorb Los Angeles, is reported to be seriously ill at the Adler Hospital San Francisco——Dr W Harriman Jones has been made chairman of the Long Beach Pure Food Commission, and Drs Albert C Sellery and Joseph M Holden have been reappointed members of the commission

ILLINOIS

Personal —Dr Ernest B M Mammen and family Bloomington, are visiting in London——Dr Ora D Holland and family, Streator, sail for Europe September 11——Dr Walter G Bain, Champaign, state bacteriologist for the water survey department, has resigned and will move, with his family, to California

Injured —Dr Charles V Moorhouse, Marietta, recently suffered severe injury by a kick of a horse——Dr Edward W Fiegenbaum Edwardsville, was seriously injured in the left leg in a fall, August 20——Dr C E. Betz St Joseph, was operated on for pleurisy with effusion, at Burnham Hospital, Champaign, August 15

Anti-Vaccination in Aurora —At a meeting of women in Aurora August 28 in opposition to the order for compulsory vaccination of children before entering school Dr Heman Spalding, Chicago made a strong argument in favor of vaccination which was ill received by the assembly As a result of the meeting a committee was appointed to draw up resolutions instructing the city council to order the president of the board of health to rescind his order of compulsory vaccination

Chicago

Ophthalmologists to Meet —The first meeting of the Chicago Ophthalmological Society will be held October 14

Isolation Hospital —The health commissioner, it is reported desires to transform the Isolation Hospital into a hospital where diphtheria, scarlet fever and other contagious diseases may be treated, and to build a new hospital for smallpox at a cost of $25,000, to accommodate 240 patients

Commencement.—At the annual commencement exercises of the Illinois Medical College, held August 29, a class of nine was graduated The doctorate address was delivered by Bishop Fallows, who quoted on "Relation of Religious and Medical Science," and the degrees were conferred by Dr Heman H Brown, president of the college

Undertaker's License Revoked.—The health commissioner took drastic measures on August 8 in his endeavor to prevent the spreading of contagious diseases of children, when he revoked the license of C Bacigalupo, an undertaker, for violation of the burial ordinance in officiating at the public funeral of a child who had died from measles in a public institution

Early Diagnosis of Tuberculosis —The Health Department advises that for early diagnosis of tuberculosis, tuberculin will be furnished free to physicians who ask for it, and the department will make the diagnosis During August, 175 cases of tuberculosis were reported, showing that more physicians are reporting tuberculosis than before, not that the disease is increasing

Bequests for Charity —By the will of Henry L Barney, who died recently, the following bequests were made Visiting Nurses' Association, $20 000, Chicago Lying in Hospital $10,000, Hospital for Destitute and Crippled Children, $5 000, Chicago Home for Incurables, $5 000, Chicago Daily News Fresh Air Fund, $10,000, and Chicago Tuberculosis Institute, $10 000

Medical Library Transferred —The medical department of the John Crerar Library has been moved from the Newberry Library and installed in its new quarters Gen Alfred C Girard, the librarian, announces that the reference library is open as usual to practitioners The collection now consists of about 41 000 volumes, and 389 medical periodicals are regularly received The new location of the library is on the sixth floor of the Marshall Field building, adjoining the reading room

Personal —Dr Edward V L Brown leaves for Europe this month, to be gone seven months——Dr Haim I Davis superintendent of the Detention Hospital, is visiting eastern cities to inspect the methods employed in the care of insane in incipient stages——Dr and Mrs Filip Kreissl have returned from Europe——Dr Stanley Thomas has been appointed assistant at the Minnesota State Hospital for Insane, St Peter——Dr Margaret R Riley has passed the civil service examination for school medical inspector

Deaths of the Week —During the week ended August 31, 616 deaths occurred, equivalent to an annual death rate per 1 000 of 15 24 During the previous week the deaths numbered 684, and the death rate per 1,000 was 16 92, and during the corresponding week of 1906 the deaths were 561, with a death rate of 14 26 per 1 000 Acute intestinal diseases caused 170 deaths violence (including suicide), 51, pneumonia 51, consumption, 39 heart disease, 37, nephritis, 36, cancer, 31, typhoid fever, 13 scarlet fever, 10, diphtheria, 6, and measles and whooping cough, each 5

MARYLAND

Baltimore

College Purchases Laboratory Site —The Baltimore Medical College has purchased a lot 64 by 167 feet with building, at a cost of $30 000 A building for laboratory purposes will be erected on the site

Deaths of the Week.—During the week ended August 31, there were 214 deaths in Baltimore, an unusually large number as compared with previous years This mortality is equivalent to an annual death rate of 18 22 per 1,000

Meeting of State Society —The Medical and Chirurgical Faculty of Maryland will visit the Jamestown Exposition September 11 and 12 Meetings will be held on the boat on both evenings At Norfolk, the faculty will be welcomed by a committee from the Norfolk Society

Personals —Dr J W Hawkins has recovered from his recent attack of ptomain poisoning——Dr Edgar M Parlett of the B & O Relief Department is taking antitoxin treatment for tetanus at the Maryland General Hospital——Dr Llewellys F Barker returned from Europe August 28——Dr W T G Whiteford, Parkville, was operated on for appendicitis at the Baltimore City Hospital, August 27——Dr John A Luetscher is reported to be ill a patient, and that, judging from the composition of his letter, a patient of no extraordinary degree of intelligence or education Strophanthus, again, is another drug that should not be prescribed except when its effects can be under the observation of the physician We say nothing of certain proprietary remedies, which appear to have a great place in the prescriber's therapeutic armamentarium The thing that strikes us most in this connection is the fact that these prescriptions, written for individual cases, must be the work of either a licensed practitioner or a layman In the latter event, is it not an infraction of the medical law to prescribe for payment for individual patients—for it is to be presumed that the writer in this column is not doing newspaper work for nothing? In the former event, is not a physician who publishes broadcast a prescription presumably intended for the relief of one individual, so that numerous other persons may use it, fancying their own symptoms to resemble those described by the newspaper patient, guilty of unprofessional conduct in a grave degree—the more grave because of the danger inherent in the use of drugs such as those named above? This consideration alone, to say nothing of a most vicious form of contract practice, such as would be involved in a licensed practitioner's prescribing publicly for pay for patients whom he had never seen, surely calls for a protest from the readers of this Philadelphia newspaper

CONSUMPTION AND BREACH OF PROMISE

In view of the dangers of the puerperal condition, for example, and the probably real though not so generally admitted dangers of heredity, it is easy to see that it is inadvisable for those suffering from developed tuberculosis to marry A recent decision[1] of the Supreme Court of Washington goes rather farther than has usually been the case in making consumption a legal disability It makes the breach of promise of marriage because of the disease in the woman justifiable, even if the engagement were entered into with knowledge of her condition This may be considered good public policy, but it is certainly a hardship to the individual In view of the fact that the condition was known before betrothal, the award of reasonable damages would seem to most persons as just in this case as in most breach of promise suits A natural outcome of this decision should be the enactment of a law making wilful betrothal with a consumptive, with knowledge of his or her condition, a punishable offense Considering, however, the fact that a very large proportion of the population is more or less infected with tuberculosis, and the possibility that we owe to this a certain immunity to the fatal forms of the disease, such a law might be difficult to enforce justly In the meantime we are making the way of the consumptive, like that of the transgressor, hard

A JUDGE ON PHYSICIANS' FEES

A Missouri court has decided that a physician's fees can not legitimately be based to any degree on the patient's income Besides being subversive of a custom of the profession that has prevailed at all times and in all places, the logical result of this decision would be to raise the standard of physicians' fees on ordinary commercial principles to the highest amount ordinarily obtainable, instead of the present custom of placing them at a medium between that and the lowest acceptable which makes it possible for the physician to exercise a humane charity in the case of the less well-to-do without either pauperizing them or impoverishing himself The physician's services, it seems, are to have a trade valuation like a loaf of bread or a pound of sugar, so that their value to the patient is in no sense dependent on the latter's economic importance If that is so, then on what principle, we ask, is it possible to justify a difference in the degree of damages awarded to different persons for the loss of a limb or other disablement, or to their families in the event of their death, through misadventure for which others are held responsible The law assumes that the economic value of life and limb differs for different people in relation to their earning capacity and other matters Must not the value of the services rendered by a physician with a view of obviating these disastrous results also necessarily vary correspondingly?

GUSTATORY AUDITION

A new variety of synesthesia, in which the subject experienced gustatory sensations on hearing sounds such as spoken words or certain non-vocal sounds, has recently been described by Pierce[1] and the case presents some interesting features The sensations experienced by the young woman under observation included oral perception of temperature, texture and consistency as well as true gustatory perception, but did not include olfactory qualities, as she was anosmic Pierce feels convinced that this phenomenon was a true synesthesia and not the result of a "lively dramatic fancy" The experience is said to come quite unsolicited, and the patient frequently has some difficulty in finding adequate equivalents to express the idea of the sensation experienced The best condition for the appearance of the synesthesia seemed to be a state of natural hunger The impression is distinct from the idea of the object to which it is compared and precedes the conception to the latter, on the other hand, similarity of sound did not necessarily determine similarity of oral sensation and the same gustatory sensation was associated with the most diverse sounds The sensations are referred to definite locations in the mouth "Thus the equivalents of *Ethel* and *hall* (tactual) are felt at the tip of the tongue, of *tox* (irritation) at the back of the throat, of *Judith* (salt) at the sides of the tongue," etc The direction of the experience was always from sound to taste, the reverse being possible only as the connections were remembered Tests over periods of many months invariably resulted in identical equivalents being elicited by like sounds There is little evidence one way or the other as to whether or not this phenomenon is to be explained on purely physiologic grounds, depending on a cross circuiting of the association fibers between different brain centers Pierce makes the interesting sugges-

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[1] Grover versus Zook 87 Pacific Rep 638

[1] American Jour Psychology, July 1907

PENNSYLVANIA.

Sanatorium Site Purchased.—Dr Samuel G Dixon, Commissioner of Health of Pennsylvania, has purchased the Mountainside Sanatorium, with 57 acres of land adjoining, at Mont Alto Park, from Dr Joseph T Rothrock, Westchester, formerly state forestry commissioner The sanatorium will be made part *of the State Camp for the Treatment of Tuberculosis*

Personal—Dr Isaac C Gable, York, has resigned as inspector of York County——Dr Milton K Neiffer, Wyncote, has been made health officer of Cheltenham, and Dr Harry D Johnson, Cheltenham, and A T Clayton, Ogontz, members of the board ——Dr Allen Keller, Telford, was recently thrown from his carriage and fractured his leg——Dr E Ziegler Bowen, North Scranton, sustained a compound fracture of the left leg while trying to catch a horse in his pasture recently

Homes for Insane—At a meeting of the committee of lunacy of the State Board of Charities, August 29, plans were approved for two new buildings to be added to the State Insane Hospital at Harrisburg, to accommodate 140 patients and to cost $150,000 The committee reports that there is great need for additional buildings for the state's insane, and at the present time there are about 13 000 patients in state and private hospitals and under county care This number has been increasing at the rate of 200 patients a year, and despite this fact no new hospitals have been erected for ten years

Philadelphia

July Vital Statistics—The report of the division of vital statistics of the bureau of health for July shows that 2,608 deaths and 2,903 births were reported

Free Treatment for Consumptives.—The order sent out in May that all patients at White Haven Sanatorium for Poor Consumptives would be required to pay $7 per week for their *maintenance*, has been reconsidered and the doors of the institution are now thrown open to any one unable to pay for treatment

Hospital Report.—The report of the *German Hospital from* July 25 to August 22 shows that 3,459 patients were treated in the various dispensaries of the institution Departments visited were as follows Medical, 326, gynecologic, 142, surgical 2,352, eye, 294, ear, 153, and throat and nose, 92 During the same period 1,206 prescriptions were issued

Cocain Sellers—Nicholas Larkins, a youth of Philadelphia, is said to have been sentenced to the House of Correction for *a year, for* selling cocain and other narcotic drugs without a license——John Grimshaw, charged with selling cocain to boys was held for trial in $800 bonds, August 24 Three boys confessed to the magistrate that they had become victims of the cocain habit, and said that Grimshaw had showed them how *to inhale cocain*

Personal—Dr Harold D Senior of the Wistar Institute of Anatomy has been appointed professor of anatomy in the College of Medicine of Syracuse (N Y) University, vice Dr George M Price resigned——Dr M J Horan, an ambulance surgeon at the Medico Chirurgical Hospital, was injured in a collision with an ambulance and street car, August 20——Dr A Alonzo Sargent has been elected supreme medical examiner of the Foresters of America

Health Report—The total number of deaths reported for the week ended August 31 was 434, as compared with 489 in the preceding week and 407 in the corresponding week of last year The principal causes of death were Typhoid fever, 7, pertussis, 9, *consumption* 53, *cancer*, 23, *apoplexy*, 17, heart disease, 33, acute respiratory disease, 33 enteritis, 68 appendicitis, 10, Bright's disease, 25, congenital debility, 11, suicide, 5, accidents, 14 and marasmus 13 There were 156 new cases of contagious disease reported, with 11 deaths, as compared with 190 cases and 26 deaths reported in the preceding week

SOUTH DAKOTA

Sanatorium Inspected—The National Sanatorium for Veteran Soldiers Battle Mountain, Fall River County, was formally inspected by *Captain* Palmer, superintendent, August 19

Personal—Dr Charles M Hollister has been appointed physician at the Indian School, Pierre, vice Dr DeLorme W Robinson, *resigned*——Dr Rudolph D Jennings, governor and surgeon of Battle Mountain Sanatorium has resigned, to take effect September 1, and will enter private practice at Rapid City

District Sociey Meeting—The Fourth District Medical Society of South Dakota will hold a meeting September 11 at Huron, under the presidency of Dr Oscar R Wright of that city The secretary announces that every physician in South Dakota has been invited *A large attendance is expected,* as the meeting occurs at the same time as the state fair

TENNESSEE

Physicians' Building—It is reported that a building is to be erected in Nashville, at Eighth Avenue near Church Street, to be used for physicians exclusively

Removes Diphtheria Sign.—A fine of $25 is said to have been imposed on Mr E B LeMaster, Memphis, August 14, on the charge of violating the health ordinance by wilfully and maliciously tearing down a diphtheria sign from his residence

Communicable Diseases—Scarlet fever is reported to be present to a serious extent in Gallatin and Rogana The health authorities are maintaining a strict quarantine and hope to check a further spread of the disease——Diphtheria is reported to be spreading in the Holly Creek section of Wayne County Two public schools have been closed, and three deaths have occurred

Personal.—Dr George F St John, Petros, has been reappointed physician of the state prison mines, Brushy Mountain ——Dr Henry F Alexander, Elizabethton, has succeeded Dr Edward T West as chief surgeon of the Mountain branch of the Soldiers' Home——Dr Paul F Eve, Nashville, is taking a trip to the Atlantic Coast——Dr William R Maney, Nashville, is reported to be ill with fever

Anti-Tuberculosis Posters—Dr James A Albright, secretary of the State Board of Health, has supplied the various railroad companies in the state with copies of the anti-tuberu losis law which must be posted in every passenger coach The railroads have been granted the privilege of combining the posters issued by the state boards of Kentucky and Tennessee as most of the roads passing through Tennessee run also through Kentucky

TEXAS

Sanitarium Incorporated—The Baptist Sanitarium of Houston has been incorporated to erect, equip, conduct and maintain a hospital for purely benevolent, charitable and educational purposes

Excursion Rates Annulled—The railroads of Texas have indicated that they will obey the ultimatum of the state health officer, issued on account of the prevalence of dengue in Mexico and have taken off all excursion rates between the United States and Mexico

Free Transportation for Nurses—In answer to an inquiry from the railroad commissioner, the attorney general holds that when a wreck occurs on a railroad, and physicians employ persons to attend the injured, such employés shall be entitled to free transportation to the hospital or place where the injured persons are taken, but are not entitled to free transportation for the return trip

Personal.—Dr John E Reeves has resigned as a member of the board of health of Orange——Dr Henry K. Leake has been appointed chairman of the board of health of Dallas, vice Dr Jesse M Pace, resigned——Dr Edward L Seay has been elected chairman, Dr William T Booth, vice president and treasurer, and Dr Joseph A Mayes, secretary, of the Denison board of health——Dr Adoniram J Gibbs has been appointed city physician of Denison——Dr J H N Huggins, Georgetown, has been appointed health commissioner of Williamson County to fill out the unexpired term of Dr Edward M Thomas, Georgetown, resigned——Dr *John A McIntosh,* assistant superintendent of the State Insane Hospital, San Antonio, has resigned, to become resident physician at the Moody Sanitarium——Dr and Mrs Louis E Magenat, Amarillo, have returned from New York

New Medical Board Meets—At the first meeting *of* the Board of Medical Examiners for the State of Texas the following committees were appointed

Rules and Regulations—*Thomas J Crowe, James D* Osborne and Radford O Braswell

On Institutions *to* Make a Study of the Various Medical Colleges —William C Collins J P Rice, John D Mitchell, Radford O Braswell and Ira W Collins

Reciprocity—Garland B Foscue Edwin P Becton and J P Rice

To Draft Certificates to be Used—Edwin P Becton, John D Mitchell and Radford O Braswell

The different branches for examinations were distributed as follows John J Dial pathology and histology, James D *Osborne* medical jurisprudence Thomas J Crowe chemistry John D Mitchell obstetrics, *Garland B Foscue* physical *diagnosis*, William B Collins anatomy J P Rice bacteriology Edwin P Becton *surgery*, *Radford O* Braswell *gynecology*, Ira W Collins, hygiene Marquis E. Daniel, physiology

MICHIGAN

New Hospital—The old office of the Michigamme mine is being remodeled as a hospital for Dr Leon L Goodnow, in charge of the work at the Ohio, Imperial and American mines The building is to be provided with three wards, operating room, etc

State Sanatorium.—The State Sanatorium for Tuberculosis, Howell, was formally opened August 10 with 7 patients The board has accepted the building now on the ground and arrangements are being completed for the immediate erection of an additional building

Personal—The residence and office of Dr Arthur F Fischer, Hubbell, were destroyed in the fire which ravaged the village, August 17 Dr Fischer's loss is estimated at $25 000, about one-third of which is covered by insurance——Dr Victor C Vaughan Ann Arbor, left for Vienna August 27, to attend the International Congress on Tuberculosis which opens in that City, September 16——Dr Albert P Ohlmacher has resigned his position in the biologic laboratory of Frederick Stearns & Co, and has resumed private practice in Detroit

July Mortality—During July, 2,591 deaths were reported to the department of state, equivalent to an annual mortality of 11 7 per 1,000 of population In July, 1906, the rate was 12 7 per 1,000 Of the deaths 507 were of infants under one year of age, 625 of children under 4 years of age, and 664 of individuals 65 years of age and over Among the important causes of death were Violence, 260, tuberculosis, 227, diarrhea, 147, cancer, 123, pneumonia, 70, meningitis and typhoid fever, each 37, whooping cough, 18, diphtheria, 15, measles, 10, scarlet fever, 8, tetanus, 7, and influenza, 4

NEW YORK.

Otisville Sanitarium.—The first municipal sanitarium for the tuberculous now accommodates 90 patients This institution was opened in June, 1906 at Otisville, Orange County Light work and nine and a half hours a day rest in bed is required of each patient

Typhoid Fever—Typhoid fever is reported to be very prevalent on the north shore of Staten Island At least 25 persons are being treated at the S R. Smith Infirmary, Tompkinsville, and at St Vincent's Hospital, West Brighton An expert from the New York board of health, who examined the water supply, reports that it is polluted.

Hospital Fire.—At a fire which broke out in the sterilizing room of Thrall Hospital Middletown, a young orderly was severely burned in his effort to extinguish the fire Dr Lillian Morgan, an interne at the institution, also assisted in fighting the fire and rescued the orderly A few patients were overcome by smoke but received no serious injury

Crusade Against Unclean Restaurants.—The health commissioner of Buffalo has been making an inspection of restaurants in the city and found in many cases kitchens unclean and insanitary, ice boxes filthy, and meat tainted A similar crusade was made a few weeks ago against certain Greek candy stores in the city, which has been followed by excellent results

Personal.—Dr John V Sheppy, Albany, who was convalescent after a compound fracture of the leg, made a misstep August 15 and fractured the leg a second time——Dr Otto Pfaff, Oneida, has been appointed resident surgeon for the Oneida Railway Company——Dr T Floyd Woodworth has been reappointed health officer of the Board of Health of the village of Kinderhook.

Use of Unclean Receptacles.—An act to amend the agricultural law relative to prohibiting the use of unclean or insanitary cans or receptacles for the transportation or sale of milk products became effective July 18 During the maneuvers of the Fourth Brigade, N G, N Y, at Farnham the state inspector destroyed several cans of milk intended for the consumption of the guardsmen, because the milk contained was found to be unclean

Illegal Practitioner Prosecuted—The Erie County Medical Society is attempting to secure evidence against J A Hughson, Buffalo, to convict him of fraud It is claimed that an electrical engineer was led by this individual to believe that he was in urgent need of medical attendance which would cost him $1 000 and, as he did not have the money, he gave $200 in cash and a note for the balance He soon discovered that he was receiving no benefit from the treatment and after consulting with physicians was convinced that he had no serious ailment. He was willing to lose the cash payment that he had made, but objected to an attempt to enforce payment on the note for $800 In another similar case this individual is said to have returned $600 to the victim

New York City

Typhoid Fever—In Richmond typhoid fever is said now to be under control as only 10 cases were reported last week The results of the water analysis have not yet been made public The disease seems to be confined to the north shore, which is supplied with water from driven wells

Death Rate—The mortality for the week ended August 24 was at the rate of 10 48 per 1 000 per annum, against 17 52 for the same week last year The total number of deaths in the five boroughs was 1 600, as compared with 1,405 in the corresponding week in 1906 During the week 304 children under 5 years died, as compared with 293 in the corresponding week of 1906 Of children over 5, 422 died, as against 318 of last year

Contagious Diseases—There were reported to the sanitary bureau for the week ended August 24, 353 cases of tuberculosis, with 149 deaths, 196 cases of diphtheria, with 22 deaths, 170 cases of measles with 14 deaths, 98 cases of scarlet fever, with 2 deaths 153 cases of typhoid fever, with 17 deaths, 16 cases of whooping cough with 14 deaths, 10 cases of cerebro spinal meningitis, with 9 deaths, 7 cases of varicella, a total of 1,003 cases and 227 deaths

Croton Water Inspection—The Croton reservoir was inspected by Commissioner of Health Darlington to determine whether, from a sanitary point of view, it would be safe to deplete other storage places into the Croton reservoir This reservoir has a capacity of 27,000 000 000 gallons of water, and will soon be filled to the brim There is no danger of a water famine The filling of the Croton reservoir has two objects in view, the first to cover the flats and thus prevent accumulation of the germs, and second, to dilute the water so that the germs occasioned by the drought would not have the power for evil

OHIO

Tuberculosis Dispensary—The antituberculosis dispensary of the Health Department of Cincinnati was recently opened at 508 W Ninth Street The dispensary is in charge of Dr Clayton B Conwell and two trained nurses

School Children Physically Unfit.—It is alleged that 50 per cent of the school children of Ohio are physically defective One of every two is said to be a sufferer from disorder of vision, bad teeth, throat affections or other ailments

Illegal Practitioner Fined—Edward Pfeiffer, Columbus, charged with practicing medicine without first having secured a license or diploma, is said to have been fined $150 and costs at Lancaster August 24 He is said to have paid the fine and costs and left town

Medical Inspection.—The systematic medical inspection of the pupils of public schools of Dayton will be inaugurated under the direction of the Montgomery County Medical Society The work will be done by a corps of 24 physicians, who will make one visit a week to each school, and more if required

Personal.—Dr Darlington J Snyder, Columbus, has resigned as member of the County Board of School Examiners——Dr Frank Winders, Columbus, who has been ill is reported to be convalescent——Dr John J Beekman, Columbus, suffered severe contusions by being run down by an automobile August 24.

State Society Meeting—At the annual meeting of the Ohio State Medical Society held at Cedar Point, August 28 and 29, a set of resolutions was adopted denouncing Senators Foraker and Dick and ex Congressman J H Southard for their alleged participation in efforts to defeat pure-food legislation during the last session of Congress The following officers were elected President, Dr Charles Bonifield, Cincinnati vice presidents, Dr David W Steiner, Lima, James S McClellan, Bellaire, Dell S Bowman, Akron, and Henry T Sutton Zanesville, secretary Dr John H J Upham, Columbus, treasurer, Dr James A Duncan, Toledo councilor for the Fourth District Dr Julius H Jacobson Toledo councilor for the Ninth District, Dr John E Sylvester, Wellston, member national legislative committee Dr Benjamin R McClellan Xenia, delegates to the American Medical Association, Drs Hugh F Lorimer, Chillicothe, Rufus B Hall, Cincinnati, and Charles Graefe Sandusky, for one year, Drs Horace Bonner, Dayton, Roland E. Skeel, Cleveland and William D Dueschle, Columbus, for two years, and alternates for one year, Dr Fred W Lane, Cambridge Benjamin H. A M Blair, Lebanon, and John A Dickson Ashtabula and for two years, Drs Charles N Smith, Toledo, A Melville Crane, Marion and Hugh A. Hart Wooster The society adjourned to meet in Columbus in 1908 spectors, and here the governor may again expect stout opposition on the part of the dominant political party But let us hope that he will be swayed by no other consideration than that of insuring to the island a clean and efficient sanitary service

On the whole, the sanitary outlook is very encouraging in Cuba, there is every reason to believe that, before the end of the year, yellow fever will have been again extirpated from the island and that, under the new law, administered by an efficient sanitary adviser, Cuba will soon be, as it can easily be, one of the healthiest countries in the world

CANADA

Infant Mortality in Montreal—The death rate among infants in Montreal per week, though showing some slight falling off, is still large, 141 having died during the week ended August 24 During that week 95 boys and 77 girls were born in Montreal

Inspection of Schools in Montreal.—Montreal is again taking up the medical inspection of schools Forty five medical men will work till the end of December at which time it is expected that the city council will appropriate further funds As far as possible, those medical men who did the work last year will be chosen this year

Personal—Dr H S Birkett, Montreal has returned from several months abroad——Dr Harvey Clare, assistant at the Toronto Provincial Hospital for the Insane, has accepted an appointment as assistant superintendent of the New Westminster B C, Hospital for the Insane——Dr Neil McPhatter president of the Canadian Club in New York has been visiting in Vancouver, B C——Dr James B Goodall Montreal, has gone abroad for two years' work in gynecology——Dr R A Reeve, Toronto, past president of the British Medical Association, was made a vice-president for life at the recent meeting at Exeter, England

FOREIGN

Honorary Degree for a Lay Investigator—It is announced that an honorary medical degree has been conferred by the medical faculty at Heidelberg on Baron J v Uexkull for his important research on the processes of stimulation in nerves and muscles

French Congress of Surgery—The twentieth French Surgical Congress which will convene at Paris October 7, is to discuss the influence of the Roentgen rays on malignant tumors, transplantation of nerves, muscles and tendons in treatment of paralysis, and tuberculosis and cancer in connection with accidents

Union of Three French Medical Societies.—Three medical societies of Paris, founded respectively, in 1796 1805 and 1808, have recently consolidated, continuing the name of the oldest the *Société de Médecine* The union was celebrated by a banquet, at which Dr Coudray presided and Professor Cornil, the oldest medical journalist present, reviewed the history of the three organizations and outlined the future policy

Reduction of Malaria Mortality in Italy—The mortality from malaria has fallen from over 15 000 to 4 700 during the last few years thanks to the systematic campaign of protection against mosquitoes and the government monopoly and sale of pure quinin at or below cost wherever there is a post office The populace is learning to appreciate the benefits of quinin more and more, over 45,000 pounds having been sold in 1906

Growth of the German Leipziger Verband—The last annual meeting showed a register of 19 828 members on the books of this association founded to promote the material interests of the profession in Germany This is an increase of 1 105 during the last year About 54 323 letters have been received and 141 865 written while 4 056 applications for positions were received and 3 374 supplied The number of medical students in Germany has increased from 6 080 last year to 7 219, and young men were urgently warned to choose some other career rather than the overcrowded medical profession With regard to contract practice in Germany, an armed peace prevails

Regulations to Prevent Transmission of Disease in Schools—The German authorities have issued directions to prevent school epidemics Chicken pox and ringround are included in the list of 24 diseases which compel precautionary measures If a case of diphtheria, epidemic cerebrospinal meningitis or scarlet fever has been discovered in a school, all persons who have come in contact with the patient are advised to rinse nose and throat daily with some disinfectant fluid, and, in case of diphtheria, to have a preventive injection of antitoxin The school rooms must be swept daily and wiped with moist cloths at least twice a week, and it is advised to have the drinking water examined for bacteria at regular intervals It is urged that the children and their parents should be instructed in the means to prevent and manage transmissible diseases The full text of the regulations is given in the *Deutsche med Wochschr*, August 15

Endowments for Hospitals and Research.—Prince Ferdinand of Bulgaria has given $800,000 for the construction of a sanatorium for consumptives An architect in Charlottenburg has bequeathed $100,000 for the construction of a hospital at Halle Dr Milschewski has given $15 000 to the university at Greifswald to endow stipends for needy students Another sum of nearly $3 000 has also been raised by alumni to endow purses for travel for students needing change of air About $300 has been given to Dr L Michaelis of Berlin to aid in his research on the action of ferments Dr W Spielmeyer of Freiburg has also received nearly $400 to further his comparative research on trypanosomiasis and sleeping sickness, on one hand, and syphilis paralysis and tabes on the other L Krehl of Heidelberg has also been granted $600 to aid his study of the elimination of water by lungs and skin at high altitudes These sums have been awarded from various endowments for scientific research in Germany

Medicolegal Experts in Paris—Some time ago the French established a special course of instruction to prepare physicians to serve as medicolegal experts A class of fourteen has been graduated and received their diplomas, and a recent notice from the president of the civil courts bids the justices of the peace—*juges de paix*—at Paris to select their experts from this list J Noir protests bitterly against this discrimination in an editorial in the last *Progrès Méd*, stating that it is detrimental to the interests of justice and to the 450 physicians who have previously been called on for expert service in these courts He states that specialist expert testimony is required, an ophthalmologist for questions involving the eye, a neurologist or psychiatrist in nervous and mental affections, and so on No one human brain can have specialist knowledge in all branches of medicine He deplores "the cultivation by the medical faculty of a parasitic flora of certificates and diplomas sapping the vitality of the ancient trunk of the old fashioned medical course still offered by the French medical schools"

LONDON LETTER

(From Our Regular Correspondent)

London, Aug 22, 1907

Railway Accidents in Great Britain in 1906

There were far more serious railway accidents in Great Britain during 1906 than is generally the case The British Board of Trade annual report on railway accidents just issued gives the number of passengers killed last year as 58, while the yearly average calculated over the past thirty years is only 22 However, even the fatality list in England for the last year need cause little alarm even to the most timid as the number of passengers killed en route works out at only 1 in every 21 000 000 The above figures relate only to passengers killed in accidents to trains Including casualties of every kind, 1,169 persons were killed and 7 212 injured in 1906

The Congress on School Hygiene in London

This congress has certainly brought out more clearly than ever the fact that England is behind most of the civilized countries of the world so far as the management and organization of schools are concerned For instance, England is not only behind the European countries, but even Chili, Argentina and Servia have passed her in providing for the medical examination of school children Another interesting point brought out at the congress is the incidence of pulmonary tuberculosis on school teachers To assist in obviating this danger, so far as possible the *Lancet*, August 17, suggests editorially that the due instruction of school teachers in the elements of hygiene must be insisted on not only that they may teach the laws of health to the children but also that they may practice on themselves Dr W Oldright, professor of hygiene at the University of Toronto read a paper on the "School Room as a Factor in the Production of Tuberculosis" Judging from statistics collected in Ontario women teachers are especially susceptible to the disease, and the same facts have been noted in the United States He stated that in some cases the mortality among women teachers from tuberculosis is as high as in the most dangerous trades such as those of printers and stone cutters

GENERAL

American Microscopical Society—At the twenty seventh annual meeting of the American Microscopical Society held in Boston August 20 22, the following officers were elected President, Prof Herbert Osborne, Ohio State University, Columbus, vice-president, Dr Arthur E Hertzler, Kansas City, Mo, secretary, Dr Fred C Zapffe, Chicago, and treasurer, Mr David L Zook, Chicago The next meeting will be held either in Cincinnati or in Rochester, N Y

Yellow Fever in Cuba.—A telegram regarding yellow fever in Cuba from Governor Magoon on August 23 showed that there were no new cases, either in the camp or in the city of Cienfuegos A second report later in the day mentions one confirmed and one suspicious case in the city, and states that 381 men are at work On August 26 the governor telegraphed that Major Kean had returned from Cienfuegos and reported the situation well in hand, although he believes the disease will probably reappear at rare intervals during the next six weeks, but will be eradicated by that time He says that there is no danger of an epidemic, that all soldiers are cured and discharged from the hospital, excepting one who is convalescent. There are ten cases, all in Cienfuegos, and with the exception of that city, no cases are known to exist in the island

The Sanitary Situation in Cuba.—The following is from an occasional correspondent who is in a position to know the actual conditions that obtain in Cuba

An unexpected outbreak of yellow fever among our soldiers at Cienfuegos has called attention to the fact that there still persist several foci of that disease in Cuba, and to the necessity of continued strict vigilance on the part of our medical officers to protect the army of occupation But "it is an ill wind that blows nobody good," for this outbreak has at last convinced the provisional government of the inefficiency of provincial and municipal authorities in sanitary matters and of determining Governor Magoon to sign the decree—long since under contemplation—centralizing the sanitary service.

The military command stationed at Cienfuegos, unable to secure a hospital for its own independent use, rented half of a private hospital belonging to a Dr Landa, with the understanding that no patients suffering from infectious diseases were to be admitted. The ward occupied by the soldiers was screened, but apparently not effectually There was no screening on the Cuban side, nor were the quarters of the hospital corps men, outside the hospital, protected against mosquitoes It is admitted that yellow fever had existed for some time in Cienfuegos and that the municipal authorities and board of health knew nothing of it At the first rumor of a suspicious fever in the garrison, Dr Agramonte, a Cuban expert, colleague of Major Walter Reed on the board which demonstrated the mode of propagation of this disease, was sent down from Havana to investigate. He found eight clear cases of yellow fever at the hospital, all hospital corps men except one, a member of the band, patients in the screened ward. Two other soldier patients in this ward subsequently developed the disease, showing that the screening had been ineffective. In the first known case the patient was taken sick August 4, eight days after his arrival from Havana, the others followed closely on this All these classes Dr Agramonte declared to be secondary to one or more previous unrecognized cases, from which must have originated the infection on the Cuban side of the hospital, as well as the hospital corps men's quarters, about the middle of July The board of health at first denied the occurrence of yellow fever in town, previous to the outbreak at the hospital, but on more careful investigation had to admit their oversight, thus the presence, on July 16, of four cases, all in Spaniards, was established It seems most probable that scattered cases had existed in Cienfuegos for several months, about which the local authorities were entirely ignorant By August 19 a total of 12 cases had occurred among our soldiers, namely, 9 hospital corps men and 3 cavalry men, all at the hospital On that date three had died while others were convalescing This, it is believed, will be the end of the outbreak It is needless to say that, as soon as the disease was diagnosed, our men were all removed from the infected hospital and the most stringent measures taken to prevent further infection. The garrison itself, some 200 men strong, is quartered at some distance from the hospital and not in any danger

It is interesting and gratifying to reflect, in this connection, that only six years ago had our troops been placed under similar circumstances, they would have been promptly removed from the purlieus of the town to some desert brush covered plain, leaving most of their baggage behind to be burned or disinfected, and being otherwise subjected to unnecessary discomfort and hardships Now they remain, quietly and fearlessly in their quarters, practically as safe as though they were in the country

In order to appreciate the significance of this outbreak and fix the responsibility therefor, we must bear in mind that when the Cuban republic came to an end, whatever else was changed the sanitary service was left, as it had been, in the hands of the provincial and municipal authorities It is true that there is a superior board of health in Havana with some sort of jurisdiction over the whole island, but this jurisdiction, outside of Havana, is mostly of an advisory character and barren of practical results

As is well known, yellow fever was prevalent in the city of Havana last summer and fall, while a number of scattering cases were reported from the southeastern part of the province of Havana and from the provinces of Matanzas and Santa Clara The sanitary situation was becoming serious Soon after his arrival in Havana, in September, 1906, Mr Taft, realizing the imminence of the danger, called Major J R Kean of the medical department of the Army, to his aid, as sanitary adviser, and gave him full powers Major Kean had made an excellent record in Cuba during our first occupation, as sanitarian and administrator, and was the man for the emergency The result of his activity was soon apparent Before the end of December yellow fever had been stamped out of Havana Unfortunately, Governor Magoon, in his desire to conciliate the dominant political party and not to interfere with provincial governments, stayed the hands of the sanitary adviser and prevented the extension of the good work beyond the capital Whenever foci of infection were reported from the interior, with which local authorities were unable to cope, the governor would give special authority for the application of special measures and the expenditure of necessary funds, but no general systematic policy was instituted and carried out The responsibilty for the Cienfuegos outbreak, therefore, can not be placed on the sanitary adviser or the superior board of health, they had nothing to do with the sanitation of that town, certainly no means of controlling it It should be noted, in passing, that Governor Magoon has accepted the mosquito doctrine of the conveyance of yellow fever somewhat reluctantly, and that, as stated in his telegram to Secretary Taft, he still believes in the agency of dirt in producing or conveying this disease It is regrettable that in such matters, so conclusively proved, he should not have entire faith in medical experts

As was mentioned above, Havana has been entirely free from yellow fever since last January It was also believed that the infection had been stamped out in the provinces last fall and winter But the reappearance of cases at various points this summer, notably Cienfuegos, without apparent reintroduction of infection from outside, shows that the work of extermination of infected stegomyia mosquitoes had been imperfectly done and that there must have occurred a succession of mild unrecognized cases about those places until the present time This means that many of the local boards of health or sanitary officers, have been ignorant, indifferent and inefficient, neither reporting cases of infectious diseases nor taking measures to prevent their propagation It is true that those actuated by a desire to do their duty were soon discouraged by the insurmountable difficulties which lack of funds, politics and favoritism placed in the way Even the recommendations of the superior board of health were generally treated with silent contempt It is surprising that, under such conditions, yellow fever should not have spread more extensively and made more victims For, as has already been explained,[1] the problem of dealing with this disease, now, is quite different from what it was during our first occupation of the island, immediately after the Spanish War

Under such general conditions there was but one remedy, one solution We know now how vain and futile it would be to expect provincial and municipal authorities to protect themselves and others by taking the necessary steps to stamp out infectious diseases They know little about it and care less In fact, it is suspected that some would rather have the threat of yellow fever hang over the heads of foreigners, especially Americans, so as to keep them out of the island and not disturb conditions which are so profitable to native politicians Therefore, the governor has wisely decided, after long consideration and in spite of active opposition from provincial bosses, to nationalize the sanitary service and give the superior board of health supreme authority over this service in all parts of the island But it is not enough to issue an edict, its execution should be entrusted to an efficient personnel, the best men in each town must be selected as sanitary officers and in-bowels are well cleared and the ipecacuanha is to be administered at, say, 10 a m, proceed as follows At 9 40 give 20 minims of tincture of opium by the mouth, at 9 50 place a mustard plaster on the epigastrium (these precautions are given to allay the tendency to vomiting), at 10 o'clock give 30 grains of freshly powdered ipecacuanha root in cachets, keep the patient lying down with the head low, with directions to move about as little as possible Should vomiting occur within a few minutes the dose must be repeated For three hours it is well to give nothing by the mouth, but if thirst distresses, small pieces of ice may be placed in the mouth occasionally After three or four hours weak tea or beef tea may be given, and the regular 'feeds' afterward gone on with On the following day give 25 grains of ipecacuanha with the same precautions The dose of ipecacuanha is repeated on successive days in doses of 20, 15 and 10 grains respectively The smaller doses are to be given even should the first dose bring down a healthy stool No food should be given for three hours before giving the ipecacuanha nor for three hours after The tendency to vomit is so slight after the second day that the opium may be withheld and the times of fasting lessened"

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[1] The Journal A M A., June 22, 1907, 2119

The following prescriptions will carry out the above suggestions

℞	gm		
Santonin	|60	or	gr x

Fac capsulas amylaceas (cachets) 3 One wafer, with water, every three hours

[The dose of santonin recommended is large and has caused poisoning —Ed]

To be followed by

℞	c c		
Olei ricini	30|	or	℥i

Sig Take at one dose in black coffee

After the bowels have been thoroughly cleared by the oil, give

℞	cc		
Tincturæ opii	25|	or	℥i

Sig Twenty drops, in water, twenty minutes before the ipecac is administered

[Many prefer to give morphin hypodermatically —Ed]

Ten minutes after giving the opium apply a mustard plaster over the stomach

Ten minutes later, i e, twenty minutes after the administration of opium, give the dose of ipecac

℞	gm		
Pulveris ipecacuanhæ	10|	or	ʒiiss

Fac chartulas vel capsulas amylaceas (cachets) 10 Sig Two powders at once on the first day, a little more than one and a half on the second day, preceded by the opium as before, a little less than one and a half on the third day, one on the fourth day Then

℞	gm		
Pulveris ipecacuanhæ	5|	or	gr lxxv

Fac capsulas amylaceas (cachets) 10 Sig One wafer a day

Opium (Morphin, Codein) Poisoning

The symptoms of toxic action of opium develop in about the following order There is first drowsiness, then increased sensibility, respirations become gradually slower and slower, the pulse weak and rapid, skin cool, sometimes moist, pupils tightly contracted except just before death, when they often dilate, the stupor becomes a coma until death takes place by paralysis of the respiratory center

The chemical antidote, if the alkaloids of opium are in the stomach, is tannic acid, 2 grams (30 grs) stirred up in a glass of warm water and drunk at once If a tube is not immediately at hand for washing out the stomach (the best method), 1/10 gr of apomorphin hydrochlorid should be administered hypodermatically, unless mustard water or 2 grams (30 grs) of zinc sulphate stirred up in water and administered by the mouth has immediately caused vomiting After the stomach contents have been completely evacuated, if narcosis continues, the stomach should be washed out several times at intervals of an hour, as morphin is excreted into the stomach from the blood The urine should also be repeatedly evacuated with a catheter Strong saline cathartics may later be administered

Whether or not morphin can be antagonized in the blood by an opponent when it is present in toxic doses is a question Many investigations have been made with its physiologic opponent, atropin, and we may sum up the results of these investigations as follows

1 There is no doubt that a combination of morphin with atropin administered simultaneously will allow a larger dose of morphin to be administered without toxic effect

2 When poisonous doses of opium or morphin have been taken and atropin is immediately injected hypodermatically in full physiologic (as 1/100 of a grain) dose, then the toxic effects of morphin may not develop

3 If toxic symptoms from opium poisoning are in evidence and well established, small doses of atropin may be given for the stimulant circulatory effect, but will apparently have but slight effect on the opium poisoning, and large antagonistic doses of atropin, i e, doses of atropin that without the morphin in the system would be poisonous, should not be given, as the full action of morphin on the respiratory center does not seem to be dissimilar to the full action of atropin on the same center, consequently one poison is added to another, and the result is more danger to the patient

4 If atropin is given in safe doses to combat the action of opium in the system, the dose should not be frequently repeated, and the first dilatation of the pupil should be the indicator that sufficient atropin has been administered

Severe flagellations or strenuous muscle exercise, as walking, in conditions of opium poisoning, should not be used, except only in the mildest cases of poisoning Many an opium death has occurred from the prostration caused by the severe exercise through which the patient was put, as this exercise may be the last straw to force the patient into fatal collapse, and circulatory depression is one of the causes of death in opium poisoning It is much safer to use friction to the body, to surround the body with dry heat and to employ artificial respiration as long as it is needed, even if it be for hours

The best cerebral stimulant to use, and one that will counteract some of the toxic effects of opium is caffein, and perhaps no method of administration is better than strong, clear coffee, both by the mouth and by the rectum, and a number of times repeated Another cardiac and cerebral stimulant in this condition is camphor in saturated solution in olive oil, a hypodermic syringeful injected intramuscularly every half-hour for several doses Strychnin may be given hypodermatically in 1/30 of a grain dose and repeated in two or three hours, if needed, but strychnin should not be given in too large doses or too frequently, as it certainly in all collapsed conditions can cause cardiac spasm, and the normal diastole of the heart can not properly take place If the tension is very low, adrenalin or suprarenalin solution (1 to 1,000) may be administered in 1 c c (15 minim) doses intramuscularly, and perhaps best not repeated The lymphatic and blood vessels gradually absorb a little of this solution at a time, giving a gradual physiologic activity of suprarenal stuff

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The Science of Medicine—It is often said that medicine is not an exact science, and that we can not hope to make it such I am inclined to demur to that statement, although, of course, much will depend *on the meaning* we attach *to the* term "exact science" If the interpretation is strict, what science is entitled to the designation? They are all liable to err, and all depend to some extent on other sciences for their foundation Much in medicine is quite as exact as any of the sciences —Alexander McPhedran, M D, in the *Canadian Practitioner and Review*

Therapeutics

[It is the purpose of this department to outline an up to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters, that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses]

Treatment of Burns.

The time honored classification of first, second and third degree burns, while of use perhaps in describing the condition of probable tissue destruction, is of far less value even from a descriptive standpoint, than a classification which takes cognizance of the agent which caused the injury One finds quite a different condition of things in a gunpowder burn than that present in a steam or hot water burn, and while the treatment of the convalescent condition may be practically identical for all varieties of burns, the first procedures will differ considerably But before these are considered pain and shock generally call for immediate treatment and usually should be attended to first

The pain is best controlled by morphin hypodermatically, this drug also acts favorably when, as is commonly the case, the shock is largely psychic However, there can not be extensive burns without considerable real shock.

First, give hypodermatically ¼ of a grain of morphin, if the patient is an adult, or proportionately smaller if not Combine with this 1/100 of a grain of atropin if shock is present, but withhold it otherwise, as nothing should be given to aggravate the thirst which is, or shortly will be present

Remove all clothing with a minimum of disturbance to the patient, cutting it free with shears rather than trying to take it off in the usual way Next cover the entire body with blankets, leaving exposed only those parts which are injured and require dressings Place hot water bottles, hot water bags or hot bricks outside of these and cover them up to prevent loss of heat Replace them as often as they cool—dry heat is what is wanted, and plenty of it If the pulse remains weak and rapid, give hypodermatically 1/30 of a grain of strychnin, followed by 1 c.c. (15 minims) of adrenalin chlorid solution (1 to 1,000) intramuscularly If it seems necessary to use further stimulation, give hypodermatically a syringeful of a saturated solution of camphor in olive oil every hour, if needed, until such time as the strychnin may be repeated with safety, at which time the atropin may be repeated, if necessary In any condition of shock these drugs should be administered hypodermatically, if they are required at all.

Systemic treatment having been attended to, the first measures taken to relieve the local injuries should always take into consideration the fact that all burns are primarily sterile and all treatment should be directed toward maintaining this condition The only exception to this is when there is laceration by flying fragments, in burns accompanying explosions, and even here the wounds are generally aseptic by reason of the missile having been heated to the point of sterilization before it made its wound The first rule, then is to handle and treat all burns, whether small or large, superficial or deep, with surgical cleanliness

If the burns are superficial, it making little or no difference what the cause, there is not much choice between a number of applications the situation of the burn and immediate availability of the remedy generally governing the decision. The skin about the burn should be cleaned with soap and water, and the burn itself with sterile water or physiologic saline solution (made by dissolving a heaping teaspoonful of salt in a quart of boiled water) Remove carefully all foreign material and puncture all blebs at their lowest points Express the serum, taking care that the raised cuticle is pressed back into close contact with the underlying tissue Then apply any of the following treatments, though it may be noted that with various slight modifications picric acid has the greatest number of advocates

Take strips of folded gauze, not less than six or eight layers, and better ten or twelve, dip them in the following solution, and having them as wet as possible without dripping, cover up the entire burn Retain with a gauze bandage snug enough to hold the dressing in place

℞	gm or c c		
Acidi picrici	5	or	ʒi
Aquæ	500		Oi

M Sig Use externally as directed

Hare ("Practical Therapeutics") adds alcohol to the picric acid solution as

℞	gm or c c		
Acidi picrici	5		gr lxxv
Alcoholis	75	or	fl℥iiss
Aqua q s	ad 1000		Oii

M Sig Use externally as directed

Or

The following may be used in the same manner as the picric acid solution

℞	c c		
Liquoris alumini acetatis (N F)	500	or	Oi

M Sig Use externally as directed

Or

℞	c c		
Acidi borici	30	or	℥i
Petrolati liquidi	500		Oi

M Sig Apply externally

If an ointment is desired the following may be used

℞

Petrolati q s

M Sig Use externally

Or

℞	gm		
Bismuthi subnitratis	20		ʒv
Unguenti acidi borici	100	or	℥iii
Petrolati	ad 300		ad ℥x

M Sig Use externally

Many otherwise excellent preparations contain enough lead to cause, not infrequently, symptoms of poisoning, even to the extent of lead colic, and for this reason are to be avoided Dr J C Biddle, surgeon to the State Hospital for Injured, at Fountain Springs, Pa , claims, in the *Therapeutic Gazette* of June 15, 1907, to have used the following prescription for twenty three years without a single case of poisoning He is inclined to think the failure to absorb is due to the acacia

℞	gm		
Sodii bicarbonatis	0		ʒiss
Pulveris acaciæ	100	or	℥iii
Plumbi carbonatis	250		℥viii
M et adde			
Olei lini q s			

Fac unguentum molle Sig Spread on lint or canton flannel and apply to the burned surfaces

(*This subject is to be continued*)

Dysentery

Dr James Cantlie, London, in the *British Medical Journal*, June 22, 1907, states that the best treatment for patients who return to Great Britain from the tropics and develop dysentery is the ipecac and opium treatment "The Epsom salt treatment in this country (Great Britain) fails, as a rule, and it must be noted that treatment by ipecacuanha is more likely to insure a permanent cure than that by Epsom salts After having had the stools examined microscopically for ova, or if that is impossible, after the administration of three 4 grain doses of santonin, a dose of castor oil is given When the

The analysis shows that the attempt to produce calcidin tablets was a failure because of the tendency of iodin to react with bases to form iodates and the tendency of the iodates to decompose with formation of iodids, which facts are well known to chemists

The details of the analysis are given below

COMMENTS

Two points are especially worthy of emphasis in the above report by the Association chemists The first is the old, old story so common in the history of nostrums and "patent medicines," of discrepancies between the extravagant, unscientific and absurd claims made by the manufacturers or promoters and the actual facts as revealed by a scientific examination Inspection of the advertising matter for calcidin shows that its promoters make the following statements regarding it

> Calcium Iodized Calcidin (Abbott) is an entirely unique substance being neither a true chemical compound nor a simple mixture of its ingredients Briefly, it is calcium carrying an excess of freely available iodin

In a circular discussing the nature of the product is this statement

> It is a new compound of iodin and calcium easily broken up when in contact with acids and of remarkable therapeutic value

Another advertisement states

> Calcidin Abbott (Calx Iodata) is a unique product It consists of lime unchanged or modified except by hydration bearing a definite percentage of available iodin There is no essential chemical union between the two neither is it a mere mechanical mixture of calcium and iodin but by a peculiar [?] process (which is stopped at precisely the right moment [sic]) the lime becomes a carrier for the iodin which is liberated when the substance is brought in contact with acids in the digestive tract

It is also claimed that calcidin produces "therapeutic effects entirely different from those obtained from iodin in any other form," that it is 'the most effective and only non injurious preparation of iodin for internal use" and that it possesses all of the valuable properties of iodin with all of the objectionable effects left out

This enthusiastic eulogy of the preparation closes with the following climax

> If it is a case in which iodin (divested of all its objectionable features) would be the remedy of choice' use calcidin and rest assured the result will be satisfactory

Certainly a preparation possessing such startling and epoch-making qualities is worthy of careful investigation

It is somewhat disappointing, after having our expectations brought up to such a point, to be informed that calcidin is simply a mixture of iodin, lime and corn starch, and that the results of its administration are exactly similar to those obtained when giving an equal amount of ordinary iodin, calcium iodid and calcium chlorid Had the promoters of this preparation advertised their product as a convenient method of administering a certain amount of these three chemicals, there would have been no ground for criticism It is a different matter, however, to make extravagant and ridiculous claims of unique and unequaled therapeutic properties, which are not, in any sense, borne out by the facts in the case

ANALYSIS OF CALCIDIN TABLETS

2 A one-ounce package of 1/3 grain calcidin tablets was purchased in the open market and the available and total iodin content of the tablets determined

Available' Iodin—The method of estimating available iodin adopted in the analysis of calcidin did not work because of difficulty in filtration and method (a) was used Fifty tablets were triturated with water the mixture was acidulated with hydrochloric acid and the liberated iodin determined with sodium thiosulphate The end point was not sharp but less than 1 c c of tenth normal sodium thiosulphate V S was consumed equivalent to 0 1250 gm iodin hence each tablet contains not more than 0 0025 gm (1/250 grain) available iodin

Total Iodin—(a) Fifty tablets were fused with potassium hydroxid The residue treated as outlined for the estimation of total iodin in calcidin required 12 2 c c tenth normal sodium thiosulphate V S indicating 1536 gm iodin, or 0030 gm iodin per tablet

(b) Fifty tablets were mixed with 2 gm potassium hydroxid and 5 c c water evaporated to dryness and ignited In this residue the total halogen content was determined gravimetrically as outlined under calcidin 2857 gm silver halide was obtained indicating 1544 gm iodin or 0031 gm per tablet

In a duplicate determination 50 tablets gave 2764 gm silver halide indicating 1493 gm iodin or 0031 gm per tablet

Since each tablet contains 0030 gm total iodin (average of the three estimations) and liberates on acidulation 00025 gm iodin the difference 00275 gm iodin is probably present combined with calcium as iodid This indicates about 0 0031 gm. (1/18 grain) calcium iodid per tablet

One other point worthy of emphasis in this connection is that, according to the advertisements of calcidin, the great advantage presented by the use of calcidin tablets is that they contain "free iodin" Calcidin and calcidin tablets are supposed to be practically the same thing, but, as is so often the case in proprietary preparations, the statements made by the manufacturers are not borne out by the chemical analysis Calcidin tablets are said to contain 1/3 of a grain of calcidin and hence should contain 1/30 of a grain of "free iodin" per tablet As a matter of fact each tablet contains only 1/250 of a grain of "free iodin," an amount so small as to be of no practical value, the remaining iodin being in the form of calcium iodid, *a substance condemned by the manufacturers of calcidin as practically inert* The advertising matter specially emphasizes the statement that "free iodin" alone is of value and that iodids are practically useless Such being the case, it is unfortunate that calcidin tablets contain practically no "free iodin" at all and that all of the iodin present is in the form of iodids In other words, the preparation does not contain the form of iodin which it is claimed to contain, and does contain the form of iodin which the promoters insist is of little value

The practical lesson to be drawn from the above report is that any manufacturer who makes extravagant claims, or any product which is advertised by means of statements of marvelous methods of manufacture, unique properties, unheard of chemical contents and the like, is to be viewed with suspicion Calm statements of scientific and chemical facts are one thing and circus poster methods of advertising are quite another

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Correspondence

Family Records—A Plea for the Systematic Preservation of Exact Data—Answers Desired.

1504 PINE STREET, PHILADELPHIA, Aug 23, 1907

To the Editor—Historians are constantly hindered in their search for truth by the absence of exact records, especially as to the lives of individuals Nowhere are these kept with completeness and exactitude Even the courts of law, the county and municipal authorities, make only partial provision for the future in this particular Even at the present enlightened time recourse is constantly had to the "family Bible," in which the custom prevails to place some account of births and deaths, which gives, at best, only names and ages, with possibly some fragmentary comments on acts Clergymen do sometimes keep books containing registrations of marriages, births and baptisms, rendering a meager and irregular assistance

Old-time physicians were accustomed likewise to take account of some such data, also the more careful ones kept notes of illnesses Not all physicians, even now, take careful notes of cases or only the, to them, more important ones All this may be of use when preserved, they too often are lost or destroyed, but at best are manifestly inadequate to make history or settle disputes as to property or other legal issues

I venture to assert that we physicians would make ourselves a vastly greater power for good, enhance our potentiality in the community, if we should do our duty by contributing systematically to the exactitude of records At the same time, our duty to our patients would be better discharged and we should earn gratitude even long after we are dead

I here offer a plan suggested long ago

To solve clinical problems successfully the physician must possess ample facts of two kinds, present and past He must ascertain the status of his patient, both to day and previously Unless a fair knowledge be acquired of antecedent conditions, the elucidation of the immediate problem can be only imperfect To minimize the gravity of the earlier history is to fall into errors and invite blame The public is quick to criticise our sins not only of commission but especially of omission They demand naturally that we shall be able to tell them correctly what is amiss now also we are constantly forced to prophesy, and a future is dark without adequate light from

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

The following has been submitted to, and its publication approved by, the Council on Pharmacy and Chemistry

W A Puckner, Secretary

CALCIDIN (ABBOTT)

W A. Puckner and A. H Clark.

In the advertising literature of the Abbott Alkaloidal Company it is claimed that Calcidin (Abbott) produces therapeutic effects entirely different from those obtained from iodin in any other form In view of this and similar extravagant claims, and because the statements made in regard to its composition are vague and confusing, it was considered of interest to determine the nature of this proprietary article Accordingly an original package of calcidin was purchased in the open market and submitted to analysis, which is printed below [1]

From this analysis we calculate the composition of calcidin to be

	Per cent.
Available ' iodin (liberated on acidulation)	0 20
Calcium iodid (CaI_2)	5 71
Calcium oxid (CaO)	18.45
Calcium carbonate ($CaCO_3$)	34 45
Corn starch (anhydrous)	16.13
Iron and aluminum	Traces
Magnesium oxid (MgO)	35
Water (by difference)	15 71
	100 00

In other words, we conclude that calcidin is essentially a mixture of iodin, calcium iodid, lime and corn starch and that the preparation is made by mixing ordinary iodin, lime and corn starch, the *calcium iodid and some calcium iodate being* formed by the action of the lime on the iodin in the presence of moisture The exact amount of calcium iodid found in different specimens of calcidin will vary in accordance with the amount of moisture present and the age of the product

While it is claimed that calcidin produces "therapeutic effects entirely different *from* those obtained from iodin *in* any other form," in reality the introduction of calcidin into the acid stomach contents results in such chemical changes that it corresponds to giving iodin, calcium iodid and calcium chlorid, each 65 mg (1 grain) of calcidin being equal to about 6 mg (1/10 grain) iodin, 4 mg (1/15 grain) calcium iodid and 50 mg (4/5 grain) calcium chlorid

As a comparison, the average dose of Liquor Iodi Compositus, U S P (Lugol's solution) is 0 2 c c (3 min), and these 3 minims contain 10 mg (1/6 gr) of iodin The dose of calcidin is given as 1/3 to 2 grains, and this will contain 1/30 to 1/5 of a grain of iodin In other words, the full dose (2 grains) of calcidin contains a little less iodin than 3 minims of Lugol's solution

CALCIDIN TABLETS

Having in mind past experiences, where proprietary preparations put up in different forms have differed more or less in composition, sometimes to the extent that the different forms resembled each other in name only, and also realizing the difficulty of making a mixture of lime and iodin into tablets without serious decomposition, the examination of calcidin tablets was taken up

This examination demonstrated the fact that calcidin tablets do not have the same composition as calcidin itself, but instead are essentially tablets of calcium iodid While 1 grain of calcidin is equal to 1/10 grain of iodin, 3 calcidin tablets, which represent 1 grain of calcidin, are equivalent to but 1/83 grain iodin While the recommended dose of calcidin itself will contain 1/30 to 1/5 grain of iodin, the same amount given in the form of calcidin tablets is equivalent to only 1/250 to 1/40 grain iodin

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ANALYSIS OF CALCIDIN

[1] Calcidin is a bluish black powder having the odor of iodin. Extracted with water, a clear colorless solution is obtained and a white residue remains The residue treated with acids liberates carbon dioxid abundantly A microscopic examination of this residue shows the presence of corn starch in large quantities. The solution, when acidulated, liberates iodin When calcidin is charred a residue remains which is soluble in hydrochloric acid, and contains traces of iron and aluminum, large quantities of calcium and some magnesium.

Iodin.—Total iodin (*a*) 1 3933 gm calcidin was mixed with a solution of 1 gm potassium hydroxid in 10 c.c. water, evaporated to dryness and ignited. The residue was extracted with small portions of hot water, using in all about 75 c.c., filtered and the filtrate collected in a separator When cool 10 c.c. hydrochloric acid was added, followed by 10 c c. solution of ferric chlorid U S P When after standing one-half hour, the liberated iodin was extracted with carbon disulphid and titrated with tenth normal sodium thiosulphate V S 15 25 c.c. were required, indicating 0 1920 gm , or 13 78 per cent. iodin

(*b*) 1 2079 gm calcidin was fused with potassium hydroxid as outlined above The residue was dissolved in water by the aid of nitric acid and the liquid filtered. In the filtrate the total halogen content was determined by precipitation with silver nitrate and calculated as silver iodid.

0 3197 gm silver halide was obtained, equivalent to 0 1727 gm., or 14 3 per cent. iodin

In a duplicate determination 1 2214 gm calcidin gave 3236 gm. silver halide, equivalent to 1748 gm or 14 31 per cent iodin

Average 14.13 per cent. total iodin.

Available Iodin—Iodin liberated on acidulation was determined as follows

(*a*) A weighed quantity of calcidin was added to 50 c.c water and acidulated with hydrochloric acid The liberated iodin was then titrated with tenth normal sodium thiosulphate V S using as indicator the blue color of the starch iodid present. The end point was not sharp and an excess of the thiosulphate V S seemed to be necessary to completely destroy the color Varying results were obtained averaging about 0 75 per cent. free iodin This being unsatisfactory, the following method was finally adopted as giving the best results

(b) 0 7838 gm. calcidin was washed by decantation with small portions of water filtering each portion and continuing the washing until the filtrate gave no reaction with silver nitrate T S and the residue was white The solution was acidulated with hydrochloric acid and the iodin set free determined with tenth normal sodium thiosulphate V S 5 73 c c. were required, indicating 0721 gm or 0 2 per cent iodin

In a duplicate determination 7049 gm calcidin required 5 15 c c indicating 0048 gm. or 0 2 per cent. iodin

Average 0 2 per cent available iodin

Calcium—(*a*) 1 3710 gm calcidin was ignited to expel iodin and to destroy starch The residue was dissolved in hydrochloric acid, and after removal of iron and aluminum the calcium was precipitated as calcium oxalate and weighed as calcium oxid.

Found 5325 gm. calcium oxid, indicating 27 76 per cent. calcium (Ca)

In a duplicate 5902 gm. calcidin gave 2295 gm calcium oxid, indicating 27 78 per cent. calcium.

Average 27 77 per cent calcium

(b) Calcium was converted into calcium sulphate by direct ignition of calcidin with sulphuric acid. 0 3497 gm calcidin gave a residue weighing 0 3405 gm , indicating 28 67 per cent calcium

In this determination the traces of iron, aluminum and magnesium were weighed as calcium sulphate For this reason the result is not considered in calculating the composition of calcidin but is included as confirming the estimation under the first method and as demonstrating the absence of appreciable quantities of alkali metals.

Magnesium—Magnesium was determined in the filtrate from the calcium oxalate precipitation. After evaporating to dryness and igniting to expel ammonium salts the residue was dissolved in dilute hydrochloric acid and filtered. In this filtrate, magnesium was determined in the usual way

1 371 gm calcidin gave 0 010 gm magnesium pyrophosphate, indicating 21 per cent. magnesium (Mg)

Carbon Dioxid—Carbon dioxid was determined by the aid of Knorr s apparatus as outlined in U S Department of Agriculture, *Bureau of Chemistry Bulletin* No 65 p 98 The apparatus was modified by placing between the condenser and the bulb containing the sulphuric acid a calcium chlorid tube charged with sodium sulphite This was found necessary to absorb iodin carried over when the solution was heated to expel carbon dioxid.

1 8008 gm. calcidin gave 277 gm CO_2 indicating 15 32 per cent. carbon dioxid

In a duplicate, 1 9869 gm calcidin gave 2985 gm CO_2, indicating 14 98 per cent. carbon dioxid

Average 15.15 per cent. carbon dioxid.

Starch—*The starch* was estimated by treating 1 1098 gm calcidin with small portions of cold water until all iodin was removed The lime was next removed by washing with very dilute hydrochloric acid The insoluble residue collected on a weighed filter and dried to constant weight, weighed 1790 gm., indicating 16 13 per cent starch.

In calculating the probable composition of the powder from the above analysis it was assumed that the iodin which is not liberated when dilute acid is added is present as calcium iodid that a part of the calcium is in combination with the carbon dioxid and that the remaining calcium is present as calcium oxid or calcium hydroxid

The presence of such a large per cent. of carbon dioxid would seem to indicate that the lime had been decomposed by exposure to air or otherwise. Therefore, the calcium not present as calcium carbonate or iodid is probably present as calcium hydroxid Following the usual custom it is calculated to calcium oxid however, as is also the magnesium The water present as water of hydration and also that normally contained in the starch is reported as difference

The analysis shows that the specimen of calcidin contained

	Per cent.
Iodin (I)	14 13
Calcium (Ca)	27 77
Corn starch (anhydrous)	16 13
Magnesium (Mg)	21
Iron and aluminum	Traces
Carbon dioxid (CO_2)	15 15

merals, or compound a salt solution without an "alkali," a purely Arabic word Altogether, he declares, we owe a good deal to the Arabians, which we ought not wholly to forget

Tuberculous Glands in the Neck.—J Eddy Blake, Brooklyn, in the *Long Island Medical Journal*, emphasizes the following points Tuberculosis is tuberculosis, no matter where found or under what conditions Tuberculous glands in the neck are simply one form of tuberculosis, and are apt to be followed by, if they are not complicated with, other forms of the disease The occurrence of tuberculous glands in a patient marks that patient as particularly liable to tuberculosis in any form, and the treatment of tuberculous glands in the neck is the treatment of incipient tuberculosis, plus the treatment of the local condition

The Pathologist—The man who specializes in clinical pathology should not merely be allowed, but encouraged and urged, to care, personally, besides his regular work, for as many patients as he has time for Otherwise his specialty needlessly stoops his shoulders and narrows his intellectual vision, sets him, in Carlyle's droll words, to "nosing in every cranny and dog-hole" of science instead of keeping on the main road—William N Berkeley, M D, in the *Long Island Medical Jouranl*

Clinical Pathology—Its Value—For many years to come clinical pathology, while it will offer aid—often valuable, sometimes invaluable—in the work, will not contrive to bring medical diagnosis out of the problematical and into the mathematical sphere—William N Berkeley, M D, in the *Long Island Medical Journal*

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers U S Army, week ending Aug 31, 1907

Reynolds F P, surg, leave of absence extended fourteen days

Fisher H C, surg, granted thirty days' leave of absence

Phalen J M asst surg, granted fifteen days leave of absence

Billingslea, C C, asst surg, granted twenty five days' leave of absence

Fisher H C surg, in addition to his other duties at Fort Logan, Colo will report to the commanding general, dept of Colorado, Denver, for temporary duty as chief surgeon

Craig E J dental surg, granted leave of absence from the Philippines division for one month, with permission to visit the United States

Lincoln, H F, cont surg, reported at Fort Robinson, Neb, for temporary duty

Wiggin, D C, cont surg, *reports at Fort Levett, Me, for duty*

Chase A M cont surg, relieved from duty at Fort Reno, Okla, and will proceed to Fort Sam Houston Tex for duty

Dade W H cont surg, leave of absence extended six days

Casiday G H dental surg returned to duty at Army General Hospital Presidio of San Francisco from leave of absence

Phelan H du R *cont* surg, returned to duty at Fort Baker, Cal from leave of absence

Dillon G P, cont surg, granted leave of absence for three months to take effect on or about Oct 1, 1907

Archer W M jr cont surg will proceed from Washington, D C to Fort Sam Houston, Texas, for duty

Navy Changes

Changes in the Medical Corps, U S Navy, for the week ending Aug 31, 1907

Dorsey I H, asst surg detached from duty at the navy recruiting station Des Moines, Iowa and ordered to Washington D C, September 3 for examination for promotion then to wait orders

Oman C M, passed asst surg, detached from the *Arkansas* and ordered to the *Illinois* September 9

DeLancy C H passed asst surg, detached from the *Florida* and ordered to the navy yard New York

Vickery F A asst surg detached from the *Illinois* and ordered to the navy yard Boston

Martin J C pharmacist detached from the naval dispensary Washington D C, and ordered to the U S Naval Medical School Hospital Washington D C

Schetky L O pharmacist detached from the naval hospital Norfolk Va and ordered to the naval hospital Washington D C

Reynolds C F pharmacist detached from the naval medical school hospital Washington D C and ordered to the bureau of medicine and surgery Navy Department

Jones A M acting asst surg sick leave revoked ordered to the naval recruiting station Des Moines Iowa.

Public Health and Marine-Hospital Service

List of changes of station and duties of commissioned and non commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Aug 28 1907

Kerr J W assts surgeon general on the expiration of his present leave directed to proceed to Cincinnati and Cleveland Ohio, Syracuse, Elmira Rochester and New York N Y, Newark N J, and Philadelphia for special temporary duty, on completion of which to rejoin his station in Washington, D C

Kalloch, P C surgeon, granted leave of absence for thirty days from Sept 10 1907

McIntosh W P, surgeon directed to assume temporary charge of the service at Portland, Maine, Quarantine during the absence on leave, of Surgeon P C Kalloch

Smith, A C, surgeon directed to proceed to Boston, reporting to Captain K W Perry for temporary duty aboard the revenue-cutter *Gresham*, on completion of which to rejoin his station in Pittsburg Pa.

Nydegger, J A, passed assist surg granted leave of absence for one month and seven days from Sept 10, 1907

Cumming, H S, passed assist surg, granted leave of absence for one month from Oct 1, 1907

Foster, M H, passed assts surg, granted leave of absence for two months and eleven days from Oct 9 1907

Ramus Carl, passed asst surg granted leave of absence for seven days from Aug 7, 1907, under paragraph 191 Service Regulations

Stansfield H A, passed asst surg, leave of absence granted Passed Assistant Surgeon Stansfield for three months from July 12 1907 amended to read for one month and eight days from July 12 1907

Holt, John M passed asst surg granted twenty three days extension of annual leave from Sept 7, 1907

Stimson, A M passed asst. surg, granted leave of absence for three weeks from Sept 3, 1907

Foster, A. L asst. surg, relieved from duty at Naples Italy on the return of Passed Assistant Surgeon A. J McLaughlin, and directed to proceed to New York City

Collins G L, asst surg, granted leave of absence for one day Aug 27 1907

Guthrie M C, asst surg, granted leave of absence for thirty days from Sept 5 1907

Stiles Ch W, Chief Division of Zoölogy, Hygienic Laboratory granted leave of absence for nine days—four days from August 14 and five days from Aug 26 1907

Porter J Y, sanitary inspector, directed to make inspections of quarantine stations of the service in the state of Florida when necessary

Friedman, H M acting asst surg, transferred from Philadelphia to Ellis Island, N Y, to take effect Aug 24, 1907

Gustetter A L, acting asst surg, leave of absence granted Acting Assistant Surgeon Gustetter amended to read from Aug 24 1907 instead of Sept 1 1907

Mason William C acting asst surg, granted leave of absence for five days from Sept 16, 1907

Riemer H B C, acting asst surg, granted leave of absence for fourteen days from Aug 17, 1907

Schwartz Louis, acting asst surg, transferred from Ellis Island, N Y to Philadelphia effective Aug 24, 1907

Tuttle Jay, acting asst surg, granted leave of absence for fourteen days from Aug 15, 1907

Weldon William A acting asst. surg, granted leave of absence for one month from Sept 10, 1907

Gahn Henry pharmacist, granted leave of absence for ten days from Aug 19, 1907

BOARDS CONVENED

Under date of Aug 20 1907, boards of medical officers were convened as follows, for the purpose of conducting medical examinations of candidates for appointment as cadets in the Revenue-Cutter Service

At Galveston, Texas—Passed Assistant Surgeon G M Corput, Chairman, and Acting Assistant Surgeon Wm H Gammon Recorder

At Washington D C—Assistant Surgeon General J M Eager, Chairman and Passed Assistant Surgeon J W Trask, Recorder

At Detroit—Surgeon Fairfax Irwin, Chairman, and Assistant Surgeon E R Marshall Recorder

At Baltimore—Surgeon L L Williams Chairman, and Passed Assistant Surgeon J T Burkhalter Recorder

At Stapleton, N Y—Passed Assistant Surgeon H W Wickes Chairman, and Assistant Surgeon R B Scofield Recorder

At Boston—Surgeon R M Woodward, Chairman, and Assistant Surgeon T W Salmon, Recorder

At Chicago—Surgeon G B Young, Chairman and Passed Assistant Surgeon B S Warren Recorder

At Portland, Me—Surgeon W P McIntosh Chairman, and Acting Assistant Surgeon A F Stuart Recorder

At San Francisco—Surgeon H W Austin, Chairman and Passed Assistant Surgeon J D Long Recorder

At Philadelphia—Surgeon T M Gassaway, Chairman and Acting Assistant Surgeon Louis Schwartz, Recorder

Health Reports

The following cases of smallpox, yellow fever cholera and plague have been reported to the Surgeon General Public Health and Marine-Hospital Service, during the week ended Aug 30, 1907

SMALLPOX—UNITED STATES

California San Francisco August 11 17 4 cases

Kansas Kansas City August 11 17 1 case

Massachusetts South Groveland July 1 August 17, 20 cases

Michigan Detroit August 11 17 1 case

Nebraska Lincoln April 1 July 31 95 cases

New York Buffalo August 11 17 1 case

North Carolina General June 1 30 62 cases, Greensboro, August 11 17 1 case

Ohio Columbus June 1 30 [illegible] cases

South Dakota Sioux Falls August 11 17 1 case

Texas San Antonio August 11 17 1 case

Vermont West Berlin April 26-August 20 43 cases

Washington Seattle July 1 31 17 cases, Spokane, August 11 17 1 case Tacoma August 11 17 1 case

SMALLPOX—FOREIGN

Austria Trieste August 3 9 1 case Vienna July 28 August 3 2 cases

Brazil Pahia July 14 27 11 cases Rio de Janeiro, July 12 28 4 cases 2 deaths, Santos June 1 30, 1 case 1 death antecedent facts, however much skill we may possess in interpreting the phenomena of Nature and her complex derangements Some physicians may have the gift of divination, but so rare is this that the only safe course is to be armed by all attainable, all relevant, incidents Then and then only, can we draw rational inferences or make exact deductions

In the conduct of any large business one of the primary requisites is a knowledge of all obtainable collateral facts No business man will blame an employe for errors committed if the cause is clearly absence of information essential to the understanding of the problem In every well regulated business office it is customary to devote a large part of the office force to the securing, sifting, systematizing of facts, direct and indirect, and placing them ready to hand Success is recognized to follow in proportion as this data is adequate, and wisdom is exhibited in its prompt utilization The laity criticise us sharply and justly for our lack of consistency in views on related subjects, diversities in belief as to causes, phenomena, progress of human derangements, above all, for seeming contrariness in selection of remedies, and guesswork as to finalities

Yet it is by no means all our fault that medicine can still be termed inexact Despite centuries of effort, we still lack many fundamental facts The public should be made to know that research workers in medicine are estimated by experts in other scientific lines to have contributed more to the sum total of human knowledge than the aggregate of all the other exact sciences

The chief obstacle in solving clinical problems lies in the absence of adequate case histories

To remedy this, I would propose the very general employment of family case-history books These should be simple yet complete in their arrangement, with clear, exact directions for use by parents, physicians and others Physicians should be able to buy them cheaply in quantity and supply them to all the families they attend gratis, or for a small sum If this were done, or wherever done, there would be at least a more or less satisfactory record kept of happenings, peculiarities, data on growth, development (mental and physical), accounts of ailments, illnesses, in sequence. When the medical attendant is confronted by the problem of an ailment he would be able, by consulting this record, to obtain invaluable light on many otherwise obscure points To depend on the memory of parents, or the records of other physicians, is far from satisfactory It would not be long before all intelligent people would adopt the custom The records would thus be entirely private When a family transfers its confidence from one physician to another, it is often most difficult to secure cordial cooperation and comparison of notes Whenever a specialist is needed he may desire information of a sort not to be had at all Such a family record could be so devised, by the help of specialists in different lines, as to supply much thus required

In the taking of histories of children the burden will fall naturally on the mother or other near relatives It can be best done coincident with the occurrence of notable circumstances, but is most feasible while the facts are fresh in the memory Invaluable records have been made by parents which furnish data for child study, comparative psychology, developmental stages, and many similar researches

The family physician is the one whose duty it is to oversee the members of a family whenever, in his judgment, there is necessity, to watch growth, to confer on subjects consonant with his official connection Whenever he visits the family and makes observations, the book should be submitted to him to make notes

During severe or protracted illness, when a trained nurse is employed, the records should be kept in this book In the interest of exactitude, there should be certain pages of blank anatomic diagrams, such as are used in hospitals and by careful clinicians, on which can be marked the site of lesions of chest, of heart, or other parts

Details of form and character need not be given here. I consulted a publisher as to the wisdom of issuing some such systematic inexpensive case-record book H [illegible] of the opinion that "it might not pay" My purpose is to beg an expression of opinion from as many as possible and then to form practical conclusions Would not such data prove of high value to physician, families and perhaps even to historians as well as lawyers? Postal card replies will suffice

J Madison Taylor

Milk Supervision and Certification by County Societies

Jackson, Mich, Aug 28 1907

To the Editor —Enclosed find our scheme for obtaining pure milk, which is self explanatory As you will notice our plan is somewhat different from the usual one of certifying the product from only one dairy Any dairyman who will comply with our rules and furnish a product meeting standard requirements as to bacterial content and food elements may have our certification The scheme has already secured good results

C G Parnall

[The work to which Dr Parnall calls attention is being done through a committee appointed by the Jackson County (Mich) Medical Society A circular and a card of application for certification are sent to the dairymen The former embodies the most important recommendations and measures for producing clean milk, requiring the dairyman to agree to inspection by the committee and to abide by its rules and regulations Any case of communicable disease occurring in the household of any person engaged in handling the milk or milk utensils must be reported at once to the committee The rules also require cleanliness of the cows and stables, the latter are to be white washed at least once a year The water supply must be uncontaminated and a separate, clean milk house provided, which must be used for no other purpose The milkers must not have any communicable disease, must wash their hands before each milking, and the utensils must be kept scrupulously clean The milk from diseased cows must not be shipped, the milk must be strained in the milk house only, it must be cooled below 55 degrees, and no preservative, coloring or other adulteration is to be permitted Then follow the detailed recommendations of the health department of New York City as suggestions These suggestions treat the subject of production of clean milk with considerable detail and must certainly be of great value to dairymen who wish to improve the quality of their milk to meet the demands of sanitary science The application card binds the dairyman to permit inspection and the taking of reasonable samples and to abide by the rules of the committee This work is excellent and ought to be imitated by many other county societies It is such an enterprise as this that compels recognition by the public]

Miscellany

Arabian Contributions to Medicine—In a letter to the *Boston Medical and Surgical Journal*, Dr E T Williams, Roxbury, Mass, refers to Dr Osler's recent statement that the physicians of the Arabian school made no solid contributions to anatomy or physiology, and says that while this is undoubtedly true, yet the Arabians made valuable contributions to science Geber, in the eighth century, discovered arsenious acid and corrosive sublimate Albucasis, in the twelfth century, discovered alcohol and the art of distillation Alhazan of Cairo, in the eleventh century, wrote a valuable treatise on optics and described the properties of lenses Rhazes of Bagdad, in the tenth century, gave the first accurate description of smallpox, Avicenna, in the eleventh century, described malignant pustule, and Avenzoar of Seville, in the twelfth century, gave a description of the itch We owe to the Arabians the methodical use of opium as a remedy, which, though used by Dioscorides and some of the Grecians to a certain extent, was apparently unknown to the Galenists They also used mercury, which was first made known to the Europeans as a medicine by the Moors and Saracens, was adopted by Guy de Chauliac and Paracelsus and formed the chief ingredient of the prescription sold by Barbarossa, the corsair of Mitylene, to Francis I to cure his pocks We can not, says Dr Williams, date a letter without the Arabic nu-

Charles W Sly, M.D Beaumont Hospital Medical College, St Louis, 1892, Physio-Medical Institute Chicago, 1888, a member of the Illinois State and Woodford County medical societies, died suddenly at his home in Benson, Ill, August 16, from heart disease, aged 44

Carodon Leroy Swartz, M.D Northwestern Medical College, St Joseph, Mo, 1891, a member of the Missouri State Medical Association and Andrew County Medical Society, formerly of Rosendale, Mo, died at his home in Arkoe, Mo, August 7, aged 55

Fred McOmber (Examination, Mich, 1899) a veteran of the Civil War, for ten years postmaster of Berrien Springs, Mich, and for a number of years an editor of that city, died suddenly at his home, August 19, from angina pectoris, aged 61

John B Hill, M D Medical Department, University of Nashville, Tenn, 1854, one of the oldest practitioners of Davidson County, Tenn, died at his home near Nashville, August 13, from pleuro pneumonia, after an illness of one week, aged 73

J H Crafford, M D Medical College of Virginia, Richmond, 1874, of Lee Hall, Warwick County, Va, at one time a member of the state legislature, died at Sarah Buxton Hospital, Newport News, Va, August 21, after a brief illness

Arthur Conrad, M D Missouri Medical College, St Louis, 1880, formerly an officer in the German army, a practitioner of Crete, Neb, for more than 25 years, died at his home, August 19, after an illness of several months

Julian G Smith, M D University of Pennsylvania, Department of Medicine, Philadelphia, 1857, for more than 30 years a practitioner of Salamanca, N, Y, died at his home in that city, August 20, after a long illness, aged 62

J A Sadler, M D University of Tennessee, Medical Department, Nashville, 1859, for about 40 years a practitioner of Sherman, Texas, died at his home in that city, August 21, after an illness of about one year, aged 75

Carter Wade, M D University of Virginia, Department of Medicine, Charlottesville, 1882, for several years coroner of Lynchburg, Va, is reported to have been killed in a railway accident at Wakefield, Mich, August 13

Adolph Hess, M D Jefferson Medical College, Philadelphia, 1893, a well known Jewish practitioner of Milwaukee, and a leader in the Zionist movement, died at his home, August 20, after an illness of two weeks, aged 42

Joseph T Pace, M D Ohio Medical University, Columbus, 1878, died at his home in Carlyle, Ill, August 17, after a lingering illness, from injuries received two years before in a fall down an elevator shaft, aged 62

James Madison Solomon, M D College of Physicians and Surgeons in the City of New York, 1872, of Brookline, Mass, died at his summer home in Hull Hill, Mass, August 21, after an illness of five months, aged 54

Charles H. King, M D Bennett College of Eclectic Medicine and Surgery, Chicago, 1886, of Redondo, Cal, died at the Orthopedic and General Hospital, Los Angeles, August 17, from paralysis, after a long illness

Hiram W Carter, M D Cleveland University of Medicine and Surgery, 1869, died at his home in Cuyahoga Falls, Ohio, August 25, from chronic prostatitis, after an illness of eighteen months, aged 66

Raleigh Robert Parcher, M D Cleveland Homeopathic Medical College, 1904, died at his home in Defiance, Ohio, August 21, from nephritis, after an illness of six months, aged 29

Marcus A Wheelock, M D St Louis Eclectic Medical College, 1882, a veteran of the Mexican War, died at his home in Salt Lake City, August 24, after a prolonged illness, aged 84

Philip B Cook, M D Miami Medical College, Cincinnati, 1867, a veteran of the Civil War and for 22 years a practitioner of Leraysville, Pa, died at his home, August 13

Ferdinand Hilbert, M.D University of Minnesota College of Medicine and Surgery, Minneapolis, 1892, of Albany, Minn, died at his home in that place in March, aged 45

Samuel Fisher, M D College of Physicians and Surgeons, Boston, 1903, a colored practitioner of Norfolk, Va, died at his home in that city, August 19, aged 31

Hugo L Patterson, M.D Medical Department, University of Nashville, Tenn, 1869, died at his home near Elkton, Tenn, July 27

William H Bentley (Years of Practice, Ill, 1877), a Confederate veteran, died at his home in Marion, Ill, August 22

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION CONTRACT PRACTICE INSURANCE FEES, MEDICAL LEGISLATION, ETC

Medical Society Postgraduate Work.

In our day every physician of enterprise and progressiveness recognizes the necessity for keeping in touch with medical advance and realizes that for this purpose he needs not only to keep abreast of the reports of medical discoveries in the literature, but also needs, at least at intervals, to come in contact with medical teachers and investigators The difficulty, of course, is for the busy practitioner to spare the time from his practice, as he must not only consider the actual cost of residence in a large city while his income is reduced to nothing, but must also count on the possibility of losing some of his patients, who consult other physicians in the meantime The possibility, therefore, of having postgraduate work in connection with the local medical society has suggested itself and has been applied in various places When properly organized the success of this movement has been marked Small beginnings often give so much satisfaction that the movement develops in such a way as to lead to the organization of promising postgraduate work

A typical example of how much can be accomplished by the medical society of a city with a population of scarcely more than 100,000 is to be found in the work of the Scranton (Pa) Clinical and Pathological Society, which, by admirable organization, though without very much effort, has succeeded in bringing a considerable amount of postgraduate instruction to the physicians of the district, to the eminent satisfaction of its members, yet without entailing any serious sacrifices on them The movement began about a year and a half ago, when the society invited a well-known New York specialist in nervous diseases to deliver a series of lectures, on successive Saturday evenings of the late spring months, when practice is likely to be less exacting The society offered to pay him a moderate consultation fee for his journeys and lectures and declared that they would greatly appreciate whatever might be done for them in this line A special fee of $20 was charged for the course of twenty lectures and altogether over twenty men attended The lectures were mainly clinical, though sufficient didactic instruction was given to enable even the ordinary practitioner to acquire a working knowledge of diagnostic methods in nervous diseases and to give him hints as to recent advances

All who participated in this course were so pleased with its practical nature and the benefits derived from it that a double course in clinical medicine relating to heart and pulmonary diseases and the kidneys was planned for the next year and was carried out with, if possible, even greater success The number in attendance increased, and neighboring towns even ten miles away awakened to the possibility of participation The district is a crowded one, with small towns every mile or so, and physicians from these towns were stimulated to take part in the course, and, having appreciated how much good was done by it, to spread the good news to others The consequence is that the Scranton Clinical and Pathological Society is now in a position to take up postgraduate work for its own members and for brother practitioners in good standing in the surrounding district to a degree that has perhaps never before been deemed possible under such circumstances

The plans of the present season include the services, during the whole month of September, of a trained pathologist, who is to have a laboratory in a private hospital in Scranton, to which the physicians of the district may come at whatever hour they can spare during the day and be given points in the technic of laboratory diagnosis that will be helpful in general practice For this work the services of an assistant in pathology at Johns Hopkins has been secured September is a favorable month for physicians because it is not a time of much sickness, and for university teachers because the regular university courses have not yet begun

The private hospital in Scranton is so conducted that any

Canada Halifax August 11 17, 1 case.

China Cheefoo July 14 27 2 cases (case July 20 from S S *Pennsylvania*) Shanghai, July 14 27, 2 cases, 60 deaths, cases foreigners deaths natives.

Germany General July 21 27 2 cases

India Calcutta July 7 13 2 deaths.

Italy General August 2 8 7 cases, Genoa, June 1 30, 6 cases, Naples August 10 1 case 1 death

Madeira Funchal June 29 August 11, 20 cases, 8 deaths

Manchuria Dalny July 7 14 4 cases

Mexico Aguas Calientes August 6-17 10 cases

Portugal Lisbon July 28 August 3, 6 cases

Russia Riga July 28 August 3 2 cases, St Petersburg, July 21 27 1 case Warsaw July 1 27 5 deaths.

Spain Almeira July 1 31 8 deaths Barcelona August 1 10 4 deaths Cadiz July 1 31 5 deaths, Seville, July 1 31, 4 deaths, Valencia July 21 27 4 deaths.

Straits Settlements Penang July 7 13 1 case 1 death

Turkey in Europe Constantinople July 28 August 4 2 cases

Turkey in Asia Damascus July 6-13 present, Bagdad July 7 13 present Bassorah July 14 20 present

West Indies Barbados—Bridgetown August 2 10 1 case

CHOLERA

China Amoy Kulangsu, native city June 30 July 6 8 deaths daily estimated Tientsin August 15, epidemic

India Bombay July 17 23 3 deaths, Calcutta, July 7 13 20 deaths Rangoon, July 7 13 1 death

Japan Moji August 20 26 cases

Philippine Islands Manila, July 14 20 2 cases, 2 deaths.

Russia Samara, Government District, July 16 August 4, 35 cases, 10 deaths

YELLOW FEVER

Brazil Manaos July 21 27 4 deaths.

Cuba Alacranes Matanzas Province August 20, 1 case.

West Indies Trinidad Port of Spain, August 4 10, 1 case, 1 death (on S S *Atrato* from Trinidad)

PLAGUE—UNITED STATES

California San Francisco August 28-29 3 cases 1 death

PLAGUE—FOREIGN

Brazil Rio de Janeiro July 14 28 3 cases 2 deaths

China Amoy Kulangsu native city, June 30-July 6, 10 deaths daily estimated.

Hawaii Honolulu, July 22 24 3 cases 2 deaths (previously reported with case which proved not to be plague)

India General July 6-13 6 812 cases 4 492 deaths, Bombay, July 17 23 3 deaths Calcutta July 7 13 18 deaths

Japan Formosa, June 30-July 27 171 cases 158 deaths.

Marriages

A. Drozdowitz, M.D, to Miss Hattye Krulewich, both of Chicago, August 29

Carl August Palm, M.D, to Miss Lena Uebel, both of Kenosha, Wis., August 22

Hugh Doudna, M D, to Miss Ethel Cavanaugh, both of Lake City, Mich, August 21

J M. Ehlert, M.D, Dutchtown, La, to Miss Myra Holmes of New Orleans, July 20

Paul Riche, M.D, to Miss Bessie Adeline Komarow, both of New York City, August 4.

Chauncey G Wright, M.D, St Louis, to Miss Alice B Lay of Oberlin, Ohio, August 14

Emanuel Ely Shelly, M.D, to Miss Ida Olive Brubaker, both of Freeport, Ill, August 20

George A. O'Connell, M.D, Mobile, Ala, to Miss Lollie Gilreath of Birmingham, Ala, August 27

Barnet P Wilson, M D, Rockville, Md., to Miss Annie Royall Owen, at Lynchburg, Va, August 22

Charles Joseph Diss, M.D, Ilion, N Y., to Miss Constance Fannie Barker of Sidney, N Y, August 22

David Moury, M.D, to Mrs Leota M Roebuck, both of Bellefontaine, Ohio, in Toledo, August 22.

Harry H Everett, M.D, to Miss Martha Blanche Hargreaves both of Lincoln, Neb, August 20

Willis W Waite, M D, Syracuse, N Y, to Miss Lillian Adelle Cook of Lake Mills, Wis, August 19

R Tait McKenzie, M.D, Philadelphia, to Miss Ethel O'Neil of Hamilton, Ont, in Dublin, Ireland, August 19

Fred L. Bates, M.D, Lima, Ohio, to Miss Bessie Bonnewitz of Van Wert, Ohio, at Covington, Ky, August 23

Francis Edward DeLong, M.D, Philadelphia, to Miss Emma J Stoltel of Economy, Pa, in Pittsburg, August 22.

William H. Doolittle, M.D, Woodstock, Ill., to Miss Mary J McNair of Winnebago, Ill., in Chicago, August 15

Ralph T Belsinger, M D, Lancaster, Pa, to Miss Rae M. Howard of Philadelphia, in New York City, recently

John Andrew, Jr., M.D, Longmont, Colo, to Miss Grace T Schnur of Newton, at Blessing Hospital, Quincy, Ill, August 21

Deaths

Horace Granville Leslie, M D University of Vermont, College of Medicine, Burlington, 1868, a member of the American Medical Association, once president of the Essex North District branch of the Massachusetts Medical Society, surgeon of the First Tennessee Volunteer Infantry during the Civil War, and since that time a prominent practitioner of Amesbury, Mass, in 1890 and 1891 representative in the legislature from Amesbury, for several years a member of the local school board died at his home, August 22, after a long illness, aged 65

Charles Follen Folsom, M D Medical School of Harvard University, Boston, 1870, of Boston, Mass, a member of the American Medical Association, from 1871 to 1882 secretary of the State Board of Health, in 1879 secretary of the State Board of Lunacy and Charity, for many years one of the physicians to the Boston City Hospital, who on the resignation of Dr Henry I Bowditch, was made a member of the National Board of Health, died in New York City, after a short illness August 20

John H Banta, M D Bellevue Hospital Medical College, New York City, 1879, a member of the Medical Society of New Jersey and the Passaic County Medical Society, a member of the Paterson (N J) Board of Health, died at his home in that city, August 20, from pleurisy following the fracture of two ribs in a fall about two months before, aged 54

Miles Henry Nash, M D Jefferson Medical College, Philadelphia, 1855, surgeon in the Confederate service throughout the Civil War, for 28 years attending physician and house physician of Demilt Dispensary, New York City, and thereafter physician emeritus to the institution, died in Richfield Park, N J, August 13, after an illness of several months, aged 74

John J Thometz, M.D Rush Medical College, Chicago, 1882, a member of the American Medical Association and of the Chicago Pathological Society, attending physician at the Hospital of St Anthony of Padua and St Elizabeth's Hospital, Chicago, who had suffered for a long time from rheumatism, died suddenly at his home from endocarditis, August 7, aged 47

Charles B Tucker, M.D Eclectic Medical College of the City of New York, 1865, a member of the hospital corps of the Army during the Civil War, and for many years a practitioner of Brooklyn, N Y, died in the Fordham Hospital for Incurables, August 26, from acute ascending paralysis, after an illness of a year and a half, aged 67

John Leander Hughes, M.D University of Georgia, Medical Department, Augusta, 1851, a member of the Medical Association of the State of Alabama and Calhoun County Medical Society, said to have been the oldest practitioner of that section of the state, died at his home in Piedmont, August 22, after a short illness, aged 80

John Elliott Miller, M D University of Pennsylvania, Department of Medicine, Philadelphia, 1860, surgeon of the Fifty seventh Pennsylvania Volunteer Infantry during the Civil War, for many years a practitioner of Hagerstown, Md, died suddenly at his home in that city, from heart disease, August 25, aged 70

Martin L James, M.D Jefferson Medical College, Philadelphia, 1852, formerly professor of practice of medicine in the Medical College of Virginia, Richmond, and dean of that institution, a member of the Virginia Medical Society and of the Richmond Academy of Medicine, died at Mobjack, Va, January 13

Alonzo Boone, M.D Miami Medical College, Cincinnati, 1878, a member of the American Medical Association, died at his home in Englewood, Ohio, August 27, from the effects of gunshot wounds said to have been self inflicted, while despondent on account of the death of his wife, aged 65

John M. Brice, M.D Medical College of the State of South Carolina, Charleston, 1890, a member of the South Carolina Medical Association and Chester County Medical Society, died at his home in Chester, August 20, from typhoid fever, after an illness of six weeks, aged 39

William R Edgar, M.D Detroit College of Medicine, 1881, for a number of years a practitioner of Lyons, Ohio, and at one time a representative in the legislature of Michigan, died at his home in Toledo, August 14, after a long period of invalidism, aged 47

William M Rymer, for many years a practitioner of Harrisville, W Va, a member of the Little Kanawha and Ohio Valley medical societies and of the Ohio State Medical Association, died suddenly from heart disease, at his home, February 2, aged 75

Book Notices

Diagnostics of Diseases of Children By Le Grand Kerr, M D Professor of Diseases of Children in the Brooklyn Postgraduate Medical School Fully Illustrated Cloth Pp 542 Price, $5 00 net Philadelphia and London W B Saunders Co 1907

This is a work in which are described certain important symptoms occurring both alone and in conjunction with other symptoms, and the various causes which might give rise to them In such a book there is danger of being superficial and of magnifying the symptom into the disease This danger the author has avoided He has described the significance of symptoms without magnifying them into diseases Throughout, he emphasizes the fact that one must not be satisfied with the condition, but must search diligently for the cause of the condition The examination of the child and the difficulties of the process are dwelt upon in the first part of the book Then are taken up important symptoms, such as vomiting, diarrhea, headache, anemia, cough, convulsions, etc, and the manifold causes which might give rise to these symptoms are discussed Finally, the diagnostic features of certain specific subjects are taken up typhoid fever, tuberculosis, meningitis, and the contagious diseases, the main diagnostic points being considered Fourteen pages are devoted to cough, with a consideration of the causes which may produce it, similarly eighteen pages are given to vomiting, thirteen to convulsions and thirty to paralysis

One expects to see in a work on diagnosis at the present day considerable space devoted to the laboratory side of diagnosis Such aids are especially important in children, where we have to rely so much on our own examination In this respect the book is disappointing There is too little mention of the laboratory part of diagnosis Thus in typhoid too much stress is laid on the inconstant signs of rose spots and an enlarged spleen, while no mention is made of the almost constant leucopenia or of the presence of bacilli in the blood Again, no mention is made of the value of a white count in differentiating between lobar pneumonia and typhoid, or of a lumbar puncture in differentiating between pneumonia and meningitis

The frequency and obscurity of middle ear trouble is mentioned, but not sufficiently emphasized We should not put otitis under this heading "Diseases in Which Pain Is the Early and Prominent Symptom" Pain is so frequently absent in middle ear trouble that this very absence constitutes one of the elements of obscurity in diagnosis It would have been well also to emphasize in the section on temperature otitis media as a frequent cause of an obscure temperature

The book is valuable chiefly in its "suggestiveness" The busy practitioner will find in it an excellent, compact description of the many causes which produce symptoms, and thus will be put on the track of a diagnosis which he can then run down in some more elaborate work, giving the pathology, symptomatology and treatment It is of value to the medical student in teaching him to think of symptoms as superficial as arising from a great variety of causes and in showing him the necessity of determining what cause has given rise to the symptoms observed in a given case

Manual of Anatomy Systematic and Practical, Including Embryology By A M Buchanan M A, M D C M, F F P S Glas, Professor of Anatomy in Anderson's College Glasgow Vol II With 363 Illustrations Mostly Original and in Colors Buckram. Pp 1539 Price $2 75 net. Chicago W T Keener & Co, 1907

The first volume was devoted to osteology and the anatomy of the upper and lower limbs The book is well bound in flexible water proof buckram and so can be used in the dissecting room The author uses the conventional anatomic nomenclature instead of the more recent Basle terminology The illustrations of the section on osteology are copious and well labeled The section on the anatomy of the limbs contains dissecting directions for the student, colored illustrations and numerous cuts Like most of the anatomic manuals, the directions to the dissector are put in fine print and in a subordinate position, while the conventional descriptive text is given prominence Practical experience in the dissecting room leads one to believe that the most necessary information for beginners in anatomy is clear and unmistakable directions to guide them in their work The second volume takes up the anatomy of the perineum, abdomen, thorax, head and neck, nervous system and special sense organs The cuts showing the anatomy of the male perineum, while small, are clear that of the triangular ligament being especially graphic The diagrams showing the descent of the testis and the varieties of tunica vaginalis are also good Considerable space is devoted to the peritoneum, the development of which is shown by diagrams In the description of the abdominal and thoracic organs, cuts showing the histologic structure of different organs are interspersed with the gross anatomy Dissecting directions for the abdomen and peritoneum are elaborate In the section on the thorax considerable attention is paid to the development and arrangement of the pleura The cuts showing the minute anatomy of the brain and cord are in part taken from Testu, Hirschfeldt and Leveille and in part from original drawings The sections on special sense organs are complete, without being unnecessarily minute The two volumes so far published are, on the whole, worthy of commendation

Manual of Personal Hygiene Proper Living on a Physiologic Basis By American Authors Edited by Walter L Pyle, A M M D Fellow of the American Academy of Medicine etc Third Edition Revised and Enlarged Cloth Pp 451 Price, $1 50 net Philadelphia W B Saunders Co, 1907

Dr Pyle has had the able assistance of Drs Charles G Stockton, Buffalo, George H Fox, New York, E Fletcher Ingals, Chicago, B Alex Randall, Philadelphia, J W Courtney, Boston, G N Stewart, Chicago, and D H Bergey, Philadelphia, who have written very satisfactory chapters on their special departments The character of the work is excellent and, in our opinion, it covers just about the right amount of ground Simplification of language would improve it, for the book is intended for lay readers and in its present form it seems to have been written for the well educated layman Others will, we fear, pass it by to take up a work written in more popular style—for, to judge from the introduction, which decries "popular" treatises, the plan of the editor has not been to make the work attractive to the masses The appendix on accidents and emergencies is excellent, being terse and clear We consider such a book as this incomplete in the present day without reference to sexual hygiene and the avoidance of venereal disease Smallpox and typhoid are well discussed, but there could well have been more said of some other transmissible diseases

Morris' Human Anatomy A Complete Systematic Treatise by English and American Authors Edited by Henry Morris M A etc President of the Royal College of Surgeons of England, and J P McMurrich A M, Ph D, Professor of Anatomy University of Michigan Illustrated Partly in Colors Fourth Edition, Revised and Enlarged Part I General Morphogeny Osteology Articulations. Cloth Price, $1 50 net Part II The Musculature Organs of Circulation The Lymphatics Price, $2 00 net Part III The Nervous System Price, $1 50 Philadelphia P Blakiston's Son & Co, 1907

In bringing out the fourth edition of Morris' anatomy the publishers have taken the opportunity of making it an international treatise by securing the services of a number of American anatomists in the revision and rewriting of certain of the sections Some of the sections have been entirely rewritten and considerably enlarged The results of recent investigations have been included so that the work represents the present state of anatomic science The Basle system of nomenclature or BNA, as it is called, has been adopted, the older English names being added in parentheses where they differ greatly from the new terms The illustrations are excellent and have been considerably changed by omitting several of the old ones and adding new ones made from specially prepared drawings or taken from other books with due credit With these changes the new edition must be welcomed as one of the most valuable text books on this important subject

Gaining Health in the West (Colorado, New Mexico Arizona) Being Impressions of a Layman Based on Seven Years' Personal Experience with Climate By George B Price Cloth Pp 138 New York B W Huebsch 1907

A very sensible little book of practical suggestions for those who go west because of tuberculosis A layman wrote this book after realizing the need for it in his own quest for health What to do and what not to do is simply stated, including such points as companions exercise, employment, camping the right mental attitude marital obligations, social life and travel The author acknowledges the aid of some medical friends in his work.

physician may send his patients there, retain charge of them himself, and thus study out puzzling ailments with the aid and under the guidance of the instructor in clinical pathology Arrangements for making the Widal test for staining and recognition of bacteria and for hardening and staining of tissues will be readily available for every physician, and all those who are members of the class will be able to apply some of them at least in their daily work during this time It is evident that this will do much to enable men to introduce the simpler methods of laboratory diagnosis into their practice in a way which might not be secured even under the more formal circumstances of medical school training The promise of such a work is, indeed, great and the result will be watched with interest.

The plans for clinical work are even more attractive than those for pathologic and laboratory methods A specialist in children's diseases from New York City is to give some hints on the feeding of children, and the care of them when suffering from respiratory diseases, especially with relation to the admission of as much air as possible A series of surgical experts will deliver one lecture apiece with a demonstration on a patient suffering from a form of disease in which he has made special studies A genitourinary specialist is to detail some of the latest advances in that specialty Gynecologists are to give some special features of recent advance in that branch of practice Clinical medicine is to be represented with a series of ten lessons with clinical demonstrations A specialist in mental diseases is to give important points on the newer phases of psychiatry, dealing especially with the early recognition of mental disease and the institution of treatment that will, so far as possible, serve as a prophylactic against the advance of the affection A physiologic chemist and a clinical pathologist who have done some specially significant work are to present the elements of their work that are likely to be of service to the general practitioner Finally, an expert in the use of *x* rays is to give a series of demonstrations with regard to the use of this agent for diagnostic purposes, as well as some practical points with regard to the installation of such apparatus as may be of the greatest service in ordinary practice

Among the members of the class there is the feeling that instruction received in this way is likely to be even more beneficial than when taken in a regular postgraduate institution Absence from home for a month or six weeks involves so much expense that the student physician is likely to try to acquire more than he can really grasp, without appreciating how much of it he may be able to use in his practice When the instruction is spread out over a year and is taken at the same time that practice continues, its application to the clinical examination of patients is much more clear and the temptation to establish various progressive features of recent medical advance in actual practice is very great For this reason there is a growing impression that an excellent method of keeping up to date in medicine has been secured and the Scranton Clinical and Pathological Society thinks that it has solved an important problem for physicians in general practice throughout the country

Pennsylvania County Societies to Meet

Dr John B Donaldson, secretary of the Washington County (Pa) Medical Society and councilor for the seventh district, has sent out a circular letter announcing the second annual meeting of the secretaries, corresponding and assistant secretaries, of the component county societies of the Pennsylvania State Medical Society, to be held at Reading, September 24. The councilors and general officers of the state society are also expected to be present A dinner will be given by the state society

The program includes papers on the following subjects What Can a Secretary Do to Get New Members?" J H. Coffman, Scotland, 'The Relation of the Secretary to the Society and to the Profession," A. F Meyers, Blooming Glen, "The Young Men in the Society and How to Interest Them," H. Z Frantz, Huntingdon, "The Lazy Secretary and His Effect on the Society," E. W Buckman, Wilkes Barre

What the Physician Is Entitled To

Dr George W Guthrie, Wilkes Barre, councilor for the Third (Pa) Councilor District, delivered an address at the July meeting of the Wayne County Medical Society, on the subject of "The Doctor's Duty to Himself" Dr Guthrie urged the completion of the organization of the local profession saying "The local society should admit every educated, intelligent, reputable, legally qualified physician not a sectarian" By membership in the county and state society and the American Medical Association, he said every doctor gains a consciousness of the power of association "Attendance at meetings brings about a better feeling, while organization enables physicians to make and to maintain just and equitable fees The oftener a society meets, the greater will be the interest The physician owes it to himself to preserve his energy and to retain his faculties, to live as long as other men He should take frequent vacations, for by working fifty two Sundays as well as holidays, he lengthens his year to fourteen months, while his work day is rarely less than sixteen hours With better feeling, induced by county membership in a local medical society, physicians can work together and one can care for another's practice while the latter is seeking recreation in fishing, hunting or travel"

An Educational Campaign in Ohio

The August *Ohio State Medical Journal* calls attention to the good work done by the Crawford County Medical Society in educating the public regarding nostrums and frauds in proprietary medicine At the meeting of the society in July 1,000 copies of the reprint of 'The Great American Fraud" articles were ordered for distribution among the physicians of the county Arrangements were also made to place a substantially bound copy of the book in each school library in the county and to place several copies in each public library, calling attention to the articles through notices in the public press As the *Journal* well says 'The plan is an excellent one and speaks for the earnestness and diligent attention to important matters on behalf of the Crawford County Medical Society Other county societies may well put this plan in force The mission of the state society is a great one, yet its chief purpose consists in the preservation of the union of county societies, in order to insure a central body of large membership, great influence, and power for the benefit, first, of the people, and second, of the medical profession The state association will be helpless in its efforts without the wide awake county organizations The absolute, almost unlimited, power for good which is possible will be realized only when county officers recognize the importance of their work and do it promptly and effectively"

Popular Interest in Medical Legislation.

A recent editorial in the Muncie (Ind.) *Star* discussed, under the heading "When Doctors Agree" the proposition for a law regulating medical licensure, eliminating sectarian questions connected with therapeutics and treatment from the state board examinations The *Star* says

> No movement is more notable than that which has been started in the medical profession for the exclusion from the license examinations by state medical boards of therapeutics The effect of it if adopted would be that the several boards of examiners that exist in some states would give place to a single board which would give to creditable applicants the title of licensed practitioner of medicine or surgery' No doubt the real danger is from admission to the practice of medicine of uneducated men who are not acquainted with the details of human construction and the cause and manifestations of disease that are recognized as scientific facts by all educated men

This editorial is of interest as showing the trend of public opinion on the question of the restriction of medical practice So long as the public regard the efforts of the educated portion of the profession to elevate the medical standard as simply a "squabble among doctors," or as an effort on the part of a portion of a profession to bar out their less fortunate associates, just so long will the public fail to take any interest in such legislation and just so long will its enforcement be against the current of popular opinion But as soon as it is recognized that the desired legislation is in the interest of public health and better sanitary conditions, rather than for or against any class or set of men, then the endorsement and support of the press and of the public will be well nigh unanimous

FAILED

Geo Washington Univ	(1907)	86	75	65	75	75	58	62	73	76	72
Howard University	(1903)	37	75	12	80	36	41	96	81	66	58
Maryland Med. College	(1905)	27	90	11	75	63	43	92	83	63	61
Maryland Med College	(1906)	63	80	31	90	75	40	77	75	85	68
Maryland Med College	(1907)	65	75	35	75	69	56	87	70	60	66
Maryland Med College	(1907)	76	85	52	75	75	45	77	75	75	71
Maryland Med College	(1907)	80	90	32	85	80	20	83	63	54	65
Maryland Med. College	(1907)	38	75	49	100	68	23	78	64	58	61
Maryland Med College	(1907)	8	30	5	80	48	13	68	31	46	37
Baltimore Medical College	(1904)	76	80	60	90	77	31	77	62	65	69
Baltimore Medical College	(1907)	77	80	76	90	70	20	68	80	77	71
Baltimore Medical College	(1907)	70	98	61	90	75	58	62	49	70	70
Baltimore Medical College	(1907)	82	85		100	79	77	75	77	80	73
Baltimore Medical College	(1907)	42	85	31	90	64	26	90	92	66	65
Baltimore Medical College	(1907)	52	90	66	75	64	49	58	52	60	63
Baltimore Medical College	(1907)	42	50	32	73	45	48	88	90	50	58
University of Maryland	(1905)	81	90	76	80	76	75			92	63
University of Maryland	(1907)	37	85	68	85	75	50	77	77	80	70
University of Maryland	(1907)	69	85	55	100	75	37	80	61	60	69
University of Maryland	(1907)	83	85	70	100	75	75		73	60	69
University of Maryland	(1907)	67	95	48	80	63	39	77	50	85	67
University of Maryland	(1907)	50	80	45	85	72	79	77	68	60	68
University of Maryland	(1907)	75	90	35	90	66	62	78	75	85	73
Johns Hopkins Med Sch	(1907)	77	90	67	75	85	40	75	53	84	72
Baltimore University	(1902)	12	60	0	75	16	4	77	53	60	40
Woman's M Coll Balt.	(1907)	61	90	50	85	75	47	80	75	75	71
Leonard School of Med	(1907)	76	85	64	85	75	43	78	62	75	71
Coll of P and S N Y	(1907)	92	95	68	65	84	22	75	77	75	73
Jefferson Medical Coll	(1906)	67	90	46	100	62	49	80	76	80	72
Jefferson Medical Coll	(1907)	67	80	51	90	79	20	87	85	60	69
Meharry Medical College	(1907)	47	75	12	80	48	13	48	65	65	50
Meharry Medical College	(1907)	60	75	22	80	45	33	42	62	75	55

New Jersey June Report.—Dr J W Bennett, secretary of the State Board of Medical Examiners of New Jersey, reports the written examination held at Trenton, June 18-19, 1907 The number of subjects examined in was 9, total number of questions asked, 135, from which candidate was required to answer 90, percentage required to pass, 75 The total number of candidates examined was 63, of whom 53 passed and 10 failed One* candidate withdrew from the examination The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Howard University	(1905)	83.5
Georgetown University	(1897)	88.2
Northwestern Univ Medical School	(1906)	83
Hahnemann Med College, Chicago	(1902)	79.1
Kentucky University	(1895)	88.7
College of P and S Baltimore	(1906)	77.1
Baltimore Medical College	(1906) 86 (1907),	83.1*
Maryland Medical College	(1907)	75.8
University of Maryland	(1903)	83.3
Johns Hopkins Medical School	(1906)	77
Dartmouth Medical College	(1901)	83.4
Long Island College Hospital	(1906)	84
College of P and S New York	(1888) 79.5 (1906)	81.5
Woman's Med Coll of Pennsylvania	(1907) 82.6, 85.5, 85.7, 86.5, 87.1 87.6 88.2	
University of Pennsylvania	(1904) 86.7 (1905) 84.5, (1906) 88, (1907) 79.5 81.8 82.8 83.2 83.4 83.5 84.5 85.2	
Hahnemann Med College Philadelphia	(1898) 83.4, (1901) 82, (1906) 80.3 (1907) 74.4, 81.6 82.3 83 83.5	
Jefferson Medical College	(1906) 78.2, 80.4, 80.5, (1907) 85.5, 82.8 83.8 84.8	
Medico Chirurgical College Philadelphia	(1906) 84.4 (1907)	79.3
University College of Medicine, Richmond	(1907)	77.4

FAILED

Chicago Homeo Med Coll	(1897)	68
University of Louisville	(1906)	67.5
Baltimore Medical College	(1901) 62 (1906)	73.8
College of P and S Baltimore	(1904)	72.5
University of Pennsylvania	(1867)	73.1
University of Naples Italy	(1899)†; (1905) 45.2, (1906)	67.5
Royal University of Turin, Italy	(1906)†	

*Percentage not given †Expelled from examination

Washington July Report—Dr C W Sharples, secretary of the Washington State Medical Examining Board, reports the written examination held at Seattle July 2-4, 1907 The number of subjects examined in was 17, total number of questions asked, 100, percentage required to pass, 75, and 70 for those having had ten years' practice The total number of candidates examined was 123, of whom 97 passed and 26 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
Cooper Medical College	(1896)	85
College of P and S Los Angeles	(1905)	87
University of So California	(1907) 85 90 91	92
College of P and S, Chicago	(1899) 81, (1902) 77 (1905) 80 91 (1906) 79 80 85 (1907) 90	
Northwestern Univ Med School	(1900) 81 (1902) 80 (1905) 91 (1906) 76 80 85 (1907) 90	
American Coll of Med and Surg	(1907)	79
Hahnemann Med Coll Chicago	(1905) 75 77 90 (1907)	79
Rush Medical College	(1891) 80, (1899) 80, (1901) 81, (1903) 75 84 87	
Harvey Medical College	(1906) 83, (1907) 81, 86	
University of Iowa		

University of Iowa Homeo Dept	(1907)	81
Keokuk Medical College	(1903)	80
University of Kansas	(1906)	90
Louisville Medical College	(1904) 76, (1906)	77
Kentucky School of Medicine	(1902)	76
College of P and S Baltimore	(1906)	80
Harvard Medical School	(1901)	83
Detroit Coll of Medicine	(1907)	80
Univ of Michigan	(1891) 72, (1896) 85, (1900) 86 (1905)	83
Hamline University	(1904)	76
University of Minnesota	(1899) 79, (1905) 82	89
Marion Sims College of Medicine	(1898)	78
St. Louis Coll of P and S	(1892)	75
St. Louis University	(1903) 77, (1907) 79, 80,	92
Kansas City Hahnemann Med. Coll	(1907)	78
Barnes Medical College	(1907)	75
Washington University, St. Louis	(1899) 77, (1907) 77, 79,	81
Creighton Med. Coll	(1907)	84
Syracuse University	(1903)	81
Bellevue Hosp Med College	(1884) 81, (1897)	87
Western Reserve University	(1897)	77
Medical College of Ohio	(1904)	89
Pulte Medical College	(1892)	72
Miami Medical College	(1904)	82
Willamette University	(1907)	79
University of Oregon	(1906) 76 88, (1907) 79 82 83, 86,	92
Jefferson Medical College	(1906)	84
Medico-Chirurgical College, Philadelphia	(1902) 83 91 (1907)	76
University of Pennsylvania	(1894)	93
University of Virginia	(1882) 74, (1905) 82,	84
Wisconsin Coll of P and S	(1904)	75
Trinity Medical Coll	(1903) 75 (1902)	88
University of Toronto Ontario	(1900) 82, (1907)	91
Queen's University Ontario	(1905) 93, (1903)	80
University of Naples Italy	(1897)	70
Nagasaki Medical College, Japan	(1902)	88

FAILED

California Med College	(1906)	56
Gross Medical College	(1904) 71, (1902)	70
Chicago Homeo Med Coll	(1891)	69
Harvey Medical College	(1883) 52, (1904)	72
Rush Medical College	(1891)	62
Northwestern Univ Med School	(1896)	64
Drake University	(1897)	65
University of Maryland	(1879)	66
Detroit College of Medicine	(1904)	70
Barnes Medical College	(1897)	47
St Louis College of P and S	(1898)	57
Marion Sims College of Medicine	(1895) 62 (1898)	50
Ensworth Central Medical College	(1906)	65
College of P and S Kansas City	(1901)	62
Medical College of Ohio	(1881)	59
Miami Medical College	(1882)	60
Willamette University	(1906)	70
Medico Chirurgical College, Philadelphia	(1899)	74
Jefferson Medical College	(1905)	70
University of Vermont	(1899)	66
Trinity Medical College Ontario	(1904)	63
Queen's University Ontario	(1901)*	
McGill University Quebec	(1875)	67

*Expelled from examination for dishonesty

Medicolegal

Requirement in Employment of Physician

The Supreme Court of Illinois says, on the appeal of Variety Manufacturing Company vs Landaker, that through a fall of an employé of the company the femur bone of his left leg was broken near his body He was treated by two physicians, who were in regular practice in the city of Chicago and who were experienced in the practice of their profession The ends of the bone would not unite, and some months after the injury the physicians who had charge of the case cut the leg open and fastened the ends of the bone together with wires The operation was not successful, although not an unusual one, and the man died a few days thereafter The man's widow, as administratrix, then sued the company for damages A judgment for $5,000 was rendered in her favor, which is here affirmed The jury was instructed that a person who is suffering from an injury is only required to use reasonable diligence to employ a physician of ordinary skill and experience to treat him, and that the law regards the injury resulting from the mistakes of the physician, or from the failure of the means employed to effect a cure, as a part of the immediate and direct damages flowing from the original injury The Supreme Court sees no error in this

Opinions as to Conditions Being Caused by Injury

The Supreme Court of Illinois says, in City of Chicago vs Didier, a personal injury case brought by the latter party, that there is some apparent confusion in the authorities on the question as to whether in such cases as this, a medical expert may be asked his opinion as to whether the physical conditions of the injured party are the result of the injuries com

Medical Education and State Boards of Registration

COMING EXAMINATIONS

MASSACHUSETTS Board of Registration in Medicine, State House, Boston September 10-12. Secretary, Dr Edwin B Harvey, 159 State House Boston

IOWA State Board of Medical Examiners Capitol Building, Des Moines September 17 19 Secretary, Dr Louis A Thomas, Des Moines.

COLORADO State Board of Medical Examiners, 1723 Tremont St, Denver October 1 Secretary Dr S D Van Meter, Denver

IDAHO State Board of Medical Examiners, Capitol Building, Boise, October 1 Secretary, Dr W F Howard Pocatello

MINNESOTA State Board of Medical Examiners, Old Capitol, St. Paul, October 1 Secretary, Dr W S Fullerton, St. Paul

MONTANA Board of Medical Examiners, The Capitol Helena, October 1 Secretary Dr W C Riddell Helena.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 1 3 Secretary Dr H M Wheeler, Grand Forks

NEW YORK State Board of Medical Examiners Albany, October 1-4 Chief of Examining Division Charles F Wheelock Albany

INDIAN TERRITORY Western District Board of Medical Examiners, Muskogee, October 7 Secretary Dr M F Williams, Muskogee

UTAH State Board of Medical Examiners, Salt Lake City, October 7 8 Secretary Dr R W Fisher Salt-Lake City

ARKANSAS State Board of Medical Examiners, State Capitol Building Little Rock October 8 Secretary Dr F T Murphy Brinkley

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock October 8 Secretary, Dr V H Hallman Hot Springs.

GEORGIA Board of Medical Examiners (Regular) Capitol Building Atlanta October 8 Secretary Dr E. R. Anthony, Griffin

MICHIGAN State Board of Registration in Medicine, Lansing October 8 Secretary, Dr B D Harison, 205 Whitney Building Detroit.

MISSISSIPPI State Board of Health, Jackson October 8 Secretary Dr J F Hunter Jackson

WYOMING State Board of Medical Examiners Laramie October 9 Secretary Dr S B Miller Laramie.

RHODE ISLAND State Board of Health Room 313, State House, Providence, October 10-11 Secretary, Dr Gardner T Swarts, Providence

DISTRICT OF COLUMBIA Board of Medical Supervisors Law School of Georgetown University Washington, October 10-14 Secretary, Dr Geo C Ober, Washington.

GEORGIA Board of Eclectic Medical Examiners, Senate Chamber, Atlanta about October 15 Secretary, Dr C H Field, Marietta.

INDIANA Board of Medical Registration and Examination Indianapolis, October 22 24 Secretary, Dr W T Gott, Crawfordsville.

ILLINOIS State Board of Health, Great Northern Hotel Chicago, October 23 25 Secretary, Dr J A Egan, Springfield

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Illinois June Report—Dr J A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, June 19 21, 1907 The number of subjects examined in was 16, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 338, of whom 320 passed and 18 failed. Three candidates took an incomplete examination and two withdrew from the examination. The following colleges were represented

PASSED

College.	Year Grad.	Total Num. Ex.
Northwestern Univ Med School	(1907)	92
American Medical Missionary College	(1907)	1
Bennett College of Ecl Med. and Surg	(1907)	21
Chicago College of Medicine and Surgery	(1907)	24
Coll. of P & S Chicago (1, 1900) (1, 1906),	(78, 1907)	80
Dearborn Medical College	(1907)	22
Hahnemann Med. Coll. Chicago	(1907)	23
Hering Medical College	(1907)	3
Illinois Medical College	(1907)	4
Jenner Medical College (1 1906)	(11, 1907)	12
National Medical University (1 1906)	(4, 1907)	5
Rush Med. Coll (1 1897) (1 1904) (1, 1906)	(22, 1907)	25
State Coll. of P and S., Indianapolis	(1907)	1
University of Louisville	(1907)	1
Hospital Coll of Med. Louisville	(1901)	1
Barnes Medical College	(1907)	1
Lincoln Medical College	(1907)	1
Ohio Medical University	(1907)	1
Hahnemann Med. Coll. Philadelphia	(1898)	1
McGill University, Quebec	(1907)	1

FAILED

College.	Year Grad.	Total Num. Ex.
Bennett Coll of Ecl. Med and Surg	(1907)	8
Chicago Coll of Med. and Surg	(1907)	4
College of P and S. Chicago	(1907)	1
Dearborn Medical College	(1907)	1
Hahnemann Medical College	(1907)	1
Hering Medical College	(1907)	1
Jenner Medical College	(1907)	2
Keokuk Medical College	(1895)	1
St. Louis University	(1907)	1
University of Lausanne Switzerland	1907)	1

Maryland June Report—Dr J McP Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, June 19 21, 1907 The number of subjects examined in was 9, total number of questions asked, 64, percentage required to pass, 75, 122 candidates were examined, of whom 90 passed and 32 failed The following colleges were represented

PASSED

College	Year of graduation	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia medica	Therapeutics.	Physiology	Average
Geo Washington Univ	(1906)	93	80	90	84	82	80	79	87	75	85
Geo Washington Univ	(1907)	88	95	66	95	87	78	85	80	90	82
Georgetown University	(1905)	75	80	95	75	84	72	85	78	76	77
Georgetown University	(1906)	88	98	86	85	87	80	97	93	95	91
Georgetown University	(1907)	89	95	87	100	77	79	92	81	65	85
Yale Medical School	(1906)	79	90	98	90	75	50	82	82	80	77
Johns Hopkins Med Sch	(1903)	85	98	87	100	70	98	97	100	91	93
Johns Hopkins Med. Sch	(1905)	85	95	88	100	75	80	90	94	83	88
Johns Hopkins Med. Sch	(1907)	83	90	87	90	75	93	86	84	82	82
Johns Hopkins Med Sch	(1907)	91	100	83	75	90	78	84	78	98	82
Johns Hopkins Med. Sch	(1907)	87	95	89	95	82	75	77	93	77	86
Johns Hopkins Med. Sch	(1907)	81	95	81	85	90	84	87		85	75
Johns Hopkins Med Sch	(1907)	82	95	93	100	70	80	80	90	82	86
Johns Hopkins Med Sch	(1907)	87	95	92	85	91	88	80	87	73	86
Johns Hopkins Med. Sch	(1907)	94	90	93	100	93	84	80	92	87	90
Johns Hopkins Med. Sch	(1907)	81	95	87	95	85	92	88	94	90	90
Johns Hopkins Med Sch	(1907)	64	98	91	100	90	90	97	76	80	85
Johns Hopkins Med. Sch	(1907)	81	85	73	95	83	93	88	93	82	83
Johns Hopkins Med Sch	(1907)	93	95	97	100	88	98	81	93	87	91
Johns Hopkins Med Sch.	(1907)	81	85	75	85	85	75	80	82	76	81
Johns Hopkins Med. Sch	(1907)	92	90	97	85	95	92	78	87	92	90
Johns Hopkins Med Sch	(1907)	78	90	86	95	93	80	87	80	69	85
Johns Hopkins Med Sch	(1907)	85	85	90	95	85	93	78	95	78	87
Johns Hopkins Med Sch	(1907)	75	85	97	90	88	81	73	81	81	84
Johns Hopkins Med Sch.	(1907)	81	100	73	90	78	66	92	84	90	84
Johns Hopkins Med. Sch.	(1907)	92	95	69	80	81	78	88	85	80	84
Jonhs Hopkins Med Sch	(1907)	90	80	96	65	82	90	83	91	80	85
Johns Hopkins Med Sch.	(1907)	90	90	91	95	78	79	85	82	79	81
Jonhs Hopkins Med Sch	(1907)	72	90	84	100	83	83	82	76	70	82
Johns Hopkins Med Sch.	(1907)	91	95	89	100	84	83	95	89	91	91
University of Maryland	(1906)	92	90	76	80	77	73	84	93	90	81
University of Maryland	(1907)	85	90	70	100	72	16	83	84	75	75
University of Maryland	(1907)	97	95	82	100	78	82	94	93	93	84
University of Maryland	(1907)	81	95	81	80	75	71	80	94	90	83
University of Maryland	(1907)	78	85	73	100	70	80	60	82	70	79
University of Maryland	(1907)	80	80	75	90	82	73	80	85	75	81
University of Maryland	(1907)	76	95	83	100	80	88	90	92	75	87
University of Maryland	(1907)	78	85	77	80	71	83	93	84	75	81
University of Maryland	(1907)	88	95	80	100	82	53	78	85	90	84
University of Maryland	(1907)	94	90	82	100	75	90	88	87	84	86
University of Maryland	(1907)	80	90	88	95	89	93	97	92	95	92
University of Maryland	(1907)	71	90	75	90	84	40	78	87	90	75
University of Maryland	(1907)	77	85	77	90	75	30	82	84	75	76
University of Maryland	(1907)	91	90	80	100	87	85	76	75	92	86
University of Maryland	(1907)	94	100	81	100	82	82	81	91	91	90
University of Maryland	(1907)	79	85	92	75	80	75	84	92	75	82
University of Maryland	(1907)	81	85	77	100	81	89	83	80	93	87
University of Maryland	(1907)	55	85	61	90	76	75	82	87	85	77
University of Maryland	(1907)	80	85	75	85	70	77	77	87	75	80
University of Maryland	(1907)	89	90	82	100	67	76	78	90	95	85
University of Maryland	(1907)	76	90	72	85	80	85	82	81	85	82
University of Maryland	(1907)	82	98	75	90	69	80	95	75	80	84
University of Maryland	(1907)	88	95	75	80	87	82	90	80	87	85
University of Maryland	(1907)	77	98	90	90	86	76	91	87	88	87
University of Maryland	(1907)	80	85	86	95	75	70	78	75	67	79
University of Maryland	(1907)	85	95	69	85	83	50	95	93	70	81
University of Maryland	(1907)	75	90	90	95	70	52	82	75	78	79
Baltimore Medical Coll	(1906)	72	85	63	75	75	61	94	85	70	76
Baltimore Medical Coll	(1907)	78	80	79	90	76	77	83	75	75	79
Baltimore Medical Coll	(1907)	78	85	67	90	56	64	90	82	85	77
Baltimore Medical Coll	(1907)	88	90	68	80	75	63	72	68	75	75
Baltimore Medical Coll	(1907)	82	90	86	95	82	81	93	80	98	87
Baltimore Medical Coll	(1907)	86	95	75	90	79	76	92	85	80	84
Baltimore Medical Coll	(1907)	85	85	59	95	76	83	82	86	80	79
Baltimore Medical Coll	(1907)	80	90	81	75	80	75	95	93	80	84
Baltimore Medical Coll	(1907)	60	90	66	85	75	65	93	90	75	78
Woman s Med. Coll, Balt	(1906)	81	80	75	75	79	75	75	86	70	77
Woman s Med Coll, Balt	(1907)	91	95	92	90	82	37	80	88	75	82
Woman s Med. Coll, Balt	(1907)	70	90	69	95	83	49	93	88	75	79
Woman s Med. Coll., Balt	(1907)	85	80	79	85	71	76	75	85	82	80
Woman s Med. Coll. Balt	(1907)	85	90	75	90	88	39	87	80	65	78
Coll of P and S Balt.	(1906)	84	95	73	100	87	73	75	85	75	83
Coll of P and S, Balt.	(1906)	89	90	75	90	82	47	93	85	72	80
Coll of P and S, Balt.	(1907)	78	85	70	85	84	86	77	72	80	80
Coll. of P and S Balt.	(1907)	85	85	71	85	84	78	78	88	71	81
Coll of P and S, Balt.	(1907)	80	100	82	100	93	85	88	92	76	88
Coll. of P and S, Balt	(1907)	83	90	69	100	75	68	81	82	85	81
Coll of P and S, Balt.	(1907)	66	90	79	90	77	57	68	93	67	76
Coll of P and S Balt.	(1907)	80	80	67	95	76	60	83	63	80	76
Harvard Medical School	(1907)	60	85	72	95	81	77	83	78	68	78
Med. Chirur Coll, Phila.	(1908)	85	85	44	90	75	57	73	89	75	75
Med. Chirur Coll., Phila	(1907)	80	90	82	95	89	86	92	92	90	88
Univ of Pennsylvania	(1907)	64	90	71	85	75	50	73	80	85	75
Univ of Pennsylvania	(1907)	82	90	85	85	94	75	80	75	95	85
Univ of Pennsylvania	(1907)	86	95	78	90	85	71	80	91	90	85
Univ of Pennsylvania	(1907)	89	98	93	95	90	58	87	86	85	87
Univ of Pennsylvania	(1907)	88	95	80	90	80	67	82	83	80	84
Univ of Pennsylvania	(1907)	85	100	88	95	82	78	93	89	95	89
Jefferson Medical Coll	(1907)	55	80	65	90	78	42	96	94	75	75
Woman s M. Coll of Pa	(1907)	81	75	75	100	86	68	75	92	91	83

plication as to who are to perform them, and who shall be responsible for failure to perform them Coming to the eleventh and twelfth sections, it is not reasonable to hold that, if the legislature intended to impose by them any duties on directors, it would have failed to name these officers

The child in this case ought to have been excluded from the school The duty of doing so was imposed on the principal or teacher in charge of the school, and he was not only culpable for neglecting to perform it, but incurred the penalty prescribed by the last section of the act The directors ought to have seen that their employé having charge of the school obeyed the injunction of the statute, and, if he did not, it would have been proper for them to exclude the child They had the right to do so before the passage of the act of 1895 (Duffield vs Williamsport School District, 162 Pa 467), and since its passage they ought not to have hesitated in seeing that it was observed by the teachers But that was not the question before the court The court was simply to determine whether a ministerial duty was imposed on the directors by the act of 1895, which they had neglected to perform No duty can be there found, and, in the absence of it, there was nothing for the court to command them to do under the petition presented for a writ of mandamus

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York

August 24

1 Landmarks in Pancreatic and Biliary Ducts B Robinson, Chicago
2 *Two Hundred Charity Cases of Pulmonary Tuberculosis Under Sanatorium Treatment at Los Angeles from 1903 to 1907 W J Barlow, Los Angeles Cal
3 *Local Treatment of Cancer R Bell, London
4 *Perforating Gunshot Wounds of Pleura and Lung H Roth, New York
5 Modern Therapy of Cystitis M W Ware New York
6 Tuberculosis of Middle Ear A Bardes New York
7 *Differential Diagnosis Between Chorea Minor and Tic. W W Graves, St Louis

2—Abstracted in The Journal, June 1, 1907, page 1893

3 Local Treatment of Cancer—On the supposition that cancer cells differ but little from those in their immediate vicinity, except that they have degenerated and become weaker, and therefore are not so capable as normal cells of resisting the destructive effect of an agent used to demolish them, Bell recommends the use of irritants, not caustic in their effects, which while not strong enough to destroy the vitality of the normal healthy cell, will succeed in killing a diseased one As a result of some years' experiments he uses an infusion of capsicum pods the strength of which can be easily regulated, preceded by the application of a 2 per cent solution of cocain, which, he thinks, aids rather than retards the destructive effect on the morbid cell The strength recommended to begin with is one ounce of pods, broken up and infused in a pint of boiling water and decanted in a few hours In a few days a crust will have formed, which will separate in a short time, when the condition of the raw surface will indicate whether or not a further application is advisable So far, the author's good results have been confined to cases of epithelioma

4 Gunshot Wounds of the Lung—When the bullet penetrates below the sixth intercostal space it perforates the diaphragm and causes injury to the abdominal viscera When entering higher it is likely to carry spicules of bone The bullet tract remains sterile When the pleura is perforated pneumothorax is likely to follow, and if a large bronchus is opened, it is likely to be extensive With pleuritic adhesions both pneumothorax and hemothorax may be absent The entrance of air will cause emphysema Shock, harassing cough, hemoptysis, pain, varying in intensity and occasion, and possibly even referred to the abdomen, and dyspnea are important symptoms Clothing carried before the bullet is the most dangerous foreign body Conservative treatment is the best prophylactic against sepsis Care of the wound entrance and exit, treatment of primary symptoms, avoidance of transportation if possible, and particularly of the examination with probing finger Immobilization of the chest and the dorsal posture with raised head and absolute rest are important in treatment Hypodermoclysis may be beneficial and oxygen of value in alleviating dyspnea The author deprecates thoracotomy, which is advocated by French and Italian surgeons It is a very desperate recourse, but will sometimes save patients otherwise doomed Hernia of the lung, if recent, should be replaced at once When of longer duration it may be ligated, resected and cauterized, or left to slough off if gangrenous

7 Diagnosis Between Tic and Chorea Minor—With careful observation, Graves says, the diagnosis should be readily made He gives a tabulation of the distinguishing features of chorea and tic, of which the following are perhaps the most important Tic does not affect general nutrition, chorea does Expression and disposition are vivacious in tic, sullen, even stupid, in chorea The movements in tic are commonly confined to a single part of the body and rarely become general, in chorea, though beginning locally, they usually become general In tic the movements are invariably confined to synergically associated muscle groups, in chorea, never Voluntary tic movements are never incoordinated, voluntary effort may control or lessen tic movements, it makes choreic movements worse A tic movement in the beginning was either a purposeful or an imitative movement, a choreic movement is purposeless and not imitative Tic movements are lessened by voluntary movements, emotional states, and in the presence of others, choreic movements are exaggerated under these circumstances Marked associative movements are never present in tic, but are always present in chorea When an inhibited tic movement gives way to the desire to tic, the ensuing movement is accompanied by feelings of satisfaction to the patient, choreic movements are always unpleasant Tic movements may be imitated, choreic movements not Tic is a habit which tends to recovery, while chorea minor is a disease which tends to recovery in from two to six months

New York Medical Journal.

August 24

8 *Questionable Influence of So Called Diathetic Condition in Diseases of Throat and Nose in Children C G Kerley New York
9 Future of the Proctologist S G Gant New York
10 Differential Diagnosis of Imbecility and Dementia Præcox A R Diefendorf New Haven Conn
11 Two Forms of Gastroduodenal Dilatation B Robinson Chicago
12 Absence and Marked Diminution of Hydrochloric Acid of Gastric Contents in Cancer Involving Organs Other Than Stomach J Friedenwald and T J Rosenthal Baltimore
13 The Art of Percussion J G Beardsley Philadelphia.
14 *Blood Pressure Studies in Typhoid J H Barach Pittsburg
15 Police Methods for Sanitary Control of Prostitution (Continued) F Bierhoff, New York.

8 Diathetic Conditions in Diseases of Throat and Nose—Kerley says that in his experience he does not find that any special type of constitution markedly tends toward adenoids or enlarged tonsils Since these conditions occur among all classes of people, one must look for a factor common to them all This he finds in the habit of early childhood of sucking the thumb, etc The vacuum thus produced tends to produce hyperemia and stasis, further, the friction of the soft palate against the posterior pharyngeal wall gives rise to irritation, congestion and hypertrophy of the mucous glands Colds, again, constitute another common factor, and according to Kerley's observations, excessive sugar eating is a common element in the production of cold Cane sugar may be toxic to every child if given in sufficiently large amounts Another factor is the tendency to lymphoid tissue involvement, peculiar to all children

14 Blood Pressure in Typhoid—Barach summarizes his paper with the following conclusions 1 Blood pressure falls from the normal after the patient has taken to bed, stays down until convalescence is established, and then returns toward the normal 2 Typhoid is a disease with blood pressure below 100 (accepting at present the Standard instrument as standard) 3 The blood pressure is governed by factors of its own, and bears no constant ratio to pulse rate or temperature 4 In diagnosis, blood pressure studies may be of value in differentiating this disease from others, after we know the behavior of other diseases in this respect In the diagnosis of the com

plained of The defendant contended that the inquiry should be as to whether the injury might have produced the physical conditions, and not whether it did produce them Expressions will be found in some cases tending to support that view, but the weight of authority in this state, as well as in other jurisdictions, does not support that contention

The reason given for permitting a properly qualified witness to give his opinion as to what did produce certain results or consequences, and not what might have produced them, is that the fact to be established is, what did cause the conditions found to exist? Where the determination of that question involves scientific knowledge or skill, which is possessed only by those who have given the matter special study, and with which jurors and others engaged in the ordinary avocations of life are unfamiliar, a witness possessing the necessary qualifications may be asked for his opinion as to what did cause the conditions described. Such an opinion is not conclusive, and is subject to be contradicted by other evidence It is for the jury to determine the weight and value of such opinions, when considered in connection with all the evidence in the case

Right of Health Officer to Compensation.

The Fourth Appellate Division of the Supreme Court of New York says, in People vs Hervey Blood and others, that it thinks the claims of Frank G Sherwood should be allowed, one of which claims was for $250 for services as health officer of the town of Albion for one year and for $20 40 for expenses in attending the annual sanitary conference of health officers at Albany

The court says that if the board of health did not have the authority to fix the compensation of the health officer for his salary in advance of his rendering the services, or did not in fact fix the same, it might agree with the board of auditors that the claim for services presented should not have been allowed, or at least not allowed in full But he did not base his claim on the specific services rendered. His claim was founded on the stated compensation fixed by the board of health, and, if he was right there was no necessity for his keeping an account, or furnishing a detailed statement of services rendered by him The record before the court showing that the board of health did so fix the compensation, the court is of the opinion that it had the authority to fix the same, and that it acted providently in so doing

Section 21 of the public health law of New York provides that every local board of health "shall prescribe the duties and powers of the local health officer, who shall be its chief executive officer, and direct him in the performance of his duties, and fix his compensation In addition to his compensation so fixed, the board of health may allow the reasonable expenses of said health officer in going to, attending and returning from, the annual sanitary conference of health officers, or equivalent meeting, held yearly within the state," etc It seems quite obvious from this provision, the court says, that it was competent for the local board of health to fix the compensation of its health officer at a yearly salary as was done in this case, and to allow him his reasonable expenses in addition to the sum so fixed for attending the sanitary conference

With regard to the contention that the health officer was entitled to no salary for the reason that the local board of health failed to prescribe the duties and powers of the health officer, the court says that it was true that no formal resolutions were adopted prescribing his duties, but it did not follow from this that he performed no services The statute made him the chief executive officer of the local board of health and he was subject to the direction of the board in the performance of his duties There was no claim that he was not ready at all times to do what was required of him by the local board of health, or did not in fact discharge the duties imposed on him by law or required of him by the local board. Merely because the board of health failed to prescribe his duties in a formal manner afforded no good reason for withholding his compensation

Neither was the board of auditors justified in rejecting these claims because it did not agree with the board of health as to his rate of compensation or the value of his services That question was for the local board of health, and the court can not say, nor was the board of auditors warranted in determining, that the board of health acted improvidently in fixing the compensation as it did

Power to Compel School Officials to Exclude Unvaccinated Pupils.

The Supreme Court of Pennsylvania had, in Commonwealth vs Rowe and others, school directors of Waynesboro school district, a case where a writ of mandamus had been awarded to compel the directors to exclude from one of the schools of the district a child who had failed to submit a certificate signed by a physician, setting forth that she had been successfully vaccinated, or that she had previously had smallpox Such a certificate is required by the twelfth section of the act of June 18, 1895, as a condition of a child's right to be admitted to the public schools The section reads "All principals or other persons in charge of schools as aforesaid are hereby required to refuse the admission of any child to the schools under their charge or supervision, except on a certificate signed by a physician, setting forth that such child has been successfully vaccinated, or that it has previously had smallpox"

Two questions were presented to the Supreme Court (1) Does the twelfth section of the act of June 18, 1895, impose any duty on school directors? (2) Can mandamus issue against them to compel them to exclude a scholar from a public school *until such scholar has furnished the certificate* called for in the twelfth section of the act? The court decides both in the negative

The court says that if the duty was imposed on the school directors as such to exclude from one of the public schools under their direction a child not having the certificate required by the foregoing section, the writ of peremptory mandamus was properly issued, but if, in the act invoked, no duty appeared to be imposed on them, the writ should have been denied.

The act of 1895 is "for the more effectual protection of the public health in the several municipalities of this commonwealth" It is composed of 21 sections, but only the eleventh, twelfth, thirteenth, fourteenth and twenty first relate to schools By the eleventh section no child belonging to or residing with a family in whose house any person may be suffering from smallpox shall be permitted to attend any public, private, parochial, Sunday or other school, and "all school principals, Sunday school superintendents, or other persons in charge of such schools," are required to exclude from them, for a fixed period, children belonging to or residing with a family living in a house in which any person may be suffering from said disease By the twelfth section "all principals or other persons in charge of schools as aforesaid" are required to exclude children not presenting the certificate provided for in it By "all principals or other persons in charge of schools as aforesaid," the legislature meant the principals or other persons in charge of the schools designated in the preceding section, and the twelfth section simply imposes on them an additional duty, which is to exclude from a school in their charge a child coming even from a home in which there may have been no smallpox, unless the proper certificate is produced.

In neither the eleventh nor twelfth section of the act is any reference made to school directors They are not named in any section of the act The duty to exclude children from infected homes and those not presenting the certificate of immunity from smallpox is placed on the principals of the schools, or other persons in charge of them They are the ones specifically designated in the eleventh section, and in the twelfth must be understood as the same persons on whom the duties had been imposed in the eleventh Their natural meaning must be given to the words "by other persons in charge of schools," and it is that the legislature intended that those having the active charge of them should be charged with the duty of excluding children, and not the directors, who have a supervisory charge of schools

In the first ten sections, relating to certain duties to be performed in the interest of public health, nothing is left to im pendicitis when we meet it early enough—operate at once and do what we can As to feeding, the trend of opinion is coming around to the belief in fuller feeding Dock is convinced that if his patient can digest the food and has no bad symptoms, no pain, no tympanites, no undue rise of temperature or pulse, he is likely to get along faster, with less liability to thrombosis and many other complications

The Laryngoscope, St Louis

July

29 Modern Methods in Repair of Cleft Palate J B Roberts, Philadelphia.
30 Cleft Palate and Hare-Lip K. W Baldwin, Philadelphia
31 Submucous Perineural Injection of Anesthetic Solutions in the Nose G Killian Freiburg Germany
32 Problem of Asepsis in Routine Office Work of the Laryngologist T Hubbard Toledo, Ohio
33 Ocular Diseases of Nasal Origin J A. Patterson, Colorado Springs Colo
34 *Differential Diagnosis of Tuberculosis and Syphilis of the Upper Respiratory Tract L M Hurd, New York
35 Anatomic and Surgical Considerations of the Frontal Sinus H J H Hoeve Des Moines, Iowa.
36 Cerebellar Abscess Following Acute Suppuration of Middle Ear W D Black, St Louis
37 Instrument for Application of Disc to Perforations of Ear Drum J W Wamsley, Philadelphia

34 **Tuberculosis and Syphilis of the Upper Respiratory Tract**—Hurd says that certain phases of syphilis of the mucosa are histologically identical with tuberculosis A number of giant cells, apparently not differing from those seen in tuberculosis, may be easily demonstrated Consequently, in an area of chronic inflammatory action in the mucosa crowded more or less with round cells, with or without loss of epithelium and ulceration, the presence of one or more giant cells in every field does not justify an unqualified histologic diagnosis of tuberculosis The presumptive diagnosis, whatever the clinical history, should be syphilis when a marked vascular thickening and the number of giant cells are out of all proportion to, and more prominent than, the coagulation necrosis, unless the tubercle bacilli can be demonstrated in the tissues

Journal of the Arkansas Medical Society, Little Rock.

July

38 Problem of Nutrition in Gastric Atony F B Turck Chicago
39 Clinical Diagnosis of Tumors. M D Ogden Little Rock, Ark
40 *Duties and Relations of Physician and Surgeon W A Snodgrass, Little Rock, Ark
41 *Preventive Medicine W P Illing Little Rock Ark
42 Medical Legislation C R Shinault Little Rock, Ark

40—Abstracted in The Journal, June 22, 1907, page 2147

41—Abstracted in The Journal, June 22, 1907, page 2146

Journal of Biological Chemistry, New York

January

43 Poisons of Amanita Phalloides J J Abel and W W Ford, Baltimore
44 The Glyoxylic Acid Reaction for Tryptophan, Indol and Skatol H D Dakin New York
45 *Cases of Diabetes Treated with Secretin N B Foster, New York
46 *Treatment of Case of Diabetes with Secretin H D Dakin and C C Ransom New York
47 The Chemistry of Flesh H S Grindley and H S Woods
48 Studies in the Chemistry of Ion proteid Compounds T B Robertson
49 Action of Certain Vegetable Cathartics on the Isolated Center of a Jelly Fish J B MacCallum

February

50 The So Called Coferment of Lipase A S Loevenhart
51 Inhibiting Effect of Sodium Fluorid on the Action of Lipase A S Loevenhart and G Pierce
52 Effect of Bile on Hydrolysis of Esters by Pancreatic Juice A S Loevenhart and C G Souder
53 Are the Animal Enzymes Concerned in the Hydrolysis of Various Esters Identical? A S Loevenhart
54 Fate of Radium After Its Introduction into the Animal Organism G M Meyer
55 Quantitative Estimation of Tryptophan in Protein Cleavage Products. P A Levene and C A Rouiller
56 Presence of Lactic Acid in the Urine of Pernicious Vomiting of Pregnancy F P Underhill

March, Vol II No 6

57 Studies of the Effects of Ions on Catalysis with Particular Reference to Peptolysis and Tryptolysis W N Berg and W J Gies
58 Composition of Toxicodendrol S F Acree and W A Syme
59 Elimination of Indoxyl Sulphate in Urine of the Insane J H Borden
60 Kinds of Lactic Acid Produced by Lactic Acid Bacteria P G Heinemann

March Vol III, No 1

61 Thymus Nucleic Acid W Jones and C R Austrian.
62 Excretion of Boric Acid from the Human Body H W Wiley Washington D C
63 *Creatin as a Brain Stimulant S S Maxwell
64 Formation of Glycogen in Muscle R A. Hatcher and C G L. Wolf, New York.
65 Relation of Thyroid to Autolysis H G Wells and R. L Lenson Chicago,
66 Relation of Extractive to Protein Phosphorus in Aspergillus Niger W Koch and H S Reed
67 Relation of Electrolytes to Lecithin and Kephalin W Koch
68 Experiments Bearing on the Mode of Oxidation of Simple Aliphatic Substances in Animal Organism H D Dakin
69 Reduction of Barium Sulphate in Ordinary Gravimetric Determinations O Folin
70 Occurrence and Formation of Alkyl Ureas and Alkyl Amines O Folin

May

71 Synthesis of Protein Through the Action of Trypsin A E Taylor
72 Synthesis of Protein Through the Action of Pepsin J B Robertson
73 Detection and Estimation of Reducing Sugars S R Benedict
74 The Heat of Combustion of Vegetable Proteins F G Benedict and T B Osborne
75 Is the Saliva of the Dog Amylolytically Active? L. B Mendel and F P Underhill
76 Behavior of Uric Acid Toward Animal Extracts and Alkalies. P H Mitchell
77 Manganese, a Normal Element in the Tissues of Fresh Water Clams H C Bradley
78 Quantitative Estimation of Extractive and Protein Phosphorus W Koch
79 Day and Night Urines E Osterberg and C G L. Wolf
80 Ammonia in Milk and Its Development During Proteolysis Under the Influence of Strong Antiseptics H C Sherman, W N Berg L J Cohen and W G Whitman
81 Separate Determination of Acetone and Diacetic Acid in Diabetic Urine O Folin

July

82 Researches on Pyrimidins H L. Wheeler and T B Johnson
83 *Relative Efficiency of Various Methods of Administering Saline Purgatives F W Bancroft
84 Proteins of the Pea T B Osborne and I F Harris
85 Nuclein Ferments of Embryos W Jones and C R Austrian

45 **Secretin in Diabetes**—The effect of secretin, an acid extract of the duodenal mucous membrane, in stimulating the external pancreatic secretion, having led Spriggs and Moore to the idea that its effect might also be exerted on the internal secretion, and to a consequent trial in diabetes, Foster records the clinical histories of five cases in which this method was used without favorable result, save that in the second case, while the sugar content remains the same, the patient has regained appetite, strength and weight to the extent of five pounds Four other patients also showed no favorable result, though these are not reported, as the conditions did not leave Foster in absolute control Foster is unable to confirm the favorable observations of Moore and his associates

46 **Id**—Dakin and Ransom also report a case of diabetes treated with secretin, in which a decrease in sugar accompanied by a diminished urine output continued until, after five weeks, the original sugar excretion was reduced by one-half, but it was not permanent

63 **Creatin as a Brain Stimulant**—Maxwell found that when powdered creatin was applied to the cortex of the motor areas, the results agreed in every essential detail with the tremblings and cramps described years ago by Landois, as following on such application A saturated solution, however, was much longer in producing the effect, which was also much less marked Other experiments show that creatin does not excite the peripheral motor nerves, and it is probable that it does not stimulate the white matter of the brain Its hydroscopic action is not sufficient to cause the contractions, as in the case of cane sugar crystals applied to the brain, and Maxwell, therefore, concludes that substances like creatin probably do not stimulate directly, but bring about secondary chemical changes, to which the excitation is due

83 **Administration of Saline Purgatives**—Bancroft, as the result of a series of careful experiments, summarizes his conclusions as follows 1 In any experiments dealing with the quantity and character of the feces eliminated, it is absolutely essential that the feces of the experimented animals should be compared with those of the control animals kept at the same time and treated in the same way as the experimented animals, except, of course, that no salts are given them The need of this precaution is largely responsible for the different results arrived at by Auer and MacCallum 2 When small doses of mild purgative are given a bulky diet will sometimes largely mask any effect that might be due to the purgative In such experiments, therefore, a more concentrated diet should be given 3 The subcutaneous injections of small doses of sodium citrate was found to increase the feces eliminated for the next

plication it has a value 5 In prognosis, the blood pressure chart is of value, a steadily falling pressure means grave danger, so long as the blood pressure keeps up at a reasonable level, we may feel that there is reserve power to work with 6 In the treatment of the disease, study of blood pressure will probably be found of the greatest actual value It may teach us that the way to combat circulatory failure in typhoid is to increase peripheral resistance, or, when to direct our efforts at the heart and when at the blood vessels, when it is well to increase, and when it is well to diminish the amount of fluid in the vessels

Boston Medical and Surgical Journal

August 22.

16 *Results of Treatment of Acquired and Congenital Torticollis at Boston Children's Hospital Since 1870 E. H Bradford and J W Sever Boston
17 *Search for a Suitable Climate. S A. Fisk, Denver Colo
18 *Study of 750 Fractures of Long Bones of Lower Extremity L. G Paul Boston.
19 *Habit Cure Mental and Physical J W Achorn, Boston

16 **Torticollis.**—Bradford and Sever present in this paper their conclusions with regard to the treatment of torticollis as justified by the experience obtained at the Children's Hospital in the last 28 years, the term "torticollis" being confined to those conditions in which the deviation of the head results from a contraction chiefly of the sternal mastoid, and not including conditions arising from spinal caries, inflamed glands, etc. In view of the results of the study of this large number of cases, covering such a long period of time, the writers think that the following conclusions may be stated, namely (a) That congenital or acquired muscular torticollis may be cured (b) That an open incision, with complete division of the two heads of origin of the sternocleidomastoid muscle, is all that is necessary, except in unusual cases (c) That the horizontal incision below the clavicle in the line of the skin cleavage is the best to use, in that it gives adequate room and also gives the best cosmetic results (d) That plaster of Paris is the easiest applied, holds the head in the corrected position, and allows ambulatory treatment, and is, therefore, the best immediate dressing (e) That the plaster cuirass should be worn not longer than two months (f) That the Buckminster Brown brace, Thomas collar, or wire collar should be worn for an average of four months following the removal of the cuirass (g) That it is best to operate on patients between the ages of 2 and 12 years, to insure a good result, and to prevent permanent bony deformity of the face and head

17 **Suitable Climate**—Fisk considers the Colorado climate for young tuberculous persons in detailed comparison with many other parts, and particularly with southern California, and he concludes in favor of the Colorado climate "used properly"

18 **Fractures of Long Bones of the Lower Limb**—Paul, after an examination of 750 cases of fracture of the long bones of the lower extremities, arrives at the following conclusions 1 In fractures of the long bones of the leg the proportion of males to females is about 4 to 1 2 Fractures of the right leg are only slightly more frequent than of the left 3 Fractures of the femur are proportionately more frequent in children than in adults 4 High fractures in any of these three bones are rare in children under 10 years of age, but are found in adults past middle age 5 Fractures in children unite readily, and old age of itself is not a cause of delayed union. 6 The majority of fractures in which union is delayed are of the oblique or comminuted variety 7 In the great majority of cases, delay in union is due to local causes, such as interposition of muscular tissue between the fragments, or faulty approximation of fragments 8 Constitutional diseases rarely cause delay in union, but certain fractures, for some unknown reason, fail to unite, although the approximation is accurate and no constitutional disease is present Practically all who have written on this subject are agreed that local conditions, as interposition of soft parts, imperfect approximation of fragments, imperfect immobilization, etc., will delay or prevent union of fractures, but opinions differ as to what extent constitutional diseases will influence union.

19 **Habit Cure.**—This is a presentment, in a very practical form, of the principle of autosuggestion in the cure of settled morbid conditions, mental or physical It lays down clearly the principle on which are attained such good results as undoubtedly do occur in many instances under Christian Science Here is an example "A man suffering from insomnia will often establish this fact in his anatomy by sitting up regularly after night, or perhaps about sunset he begins to say, 'I can't sleep,' and then keeps on vaccinating himself with this idea until saturated with it Of course, he knows he can't He has been telling himself this for ten years, and he lies awake to prove it Let him begin by saying, 'I shall sleep' Let him say it 40 times a day—say it until the memory of 'I can't sleep' fails and the affirmation 'I shall sleep' takes its place" The paper abounds in useful aphorisms, for instance "The person who wills wins, the person who tries presupposes that he is going to fail, the will to do a thing has faith for a companion, while trying to do a thing has failure for a mate" The author sums up as follows "First comes the resolution to do the thing required, then the memorization of an affirmative expression, because it is constructive and toning, a good substitute for the expression that is negative and destructive This practice should be kept up till memory takes on the affirmative expression and the negative fades away, and along with this goes concentration of mind and purpose, and finally one should seek any influence known that will assist, such as optimistic friends, reading that elevates, change of scene or thought, exercise or prayer, if one has faith"

Lancet-Clinic, Cincinnati

August 24

20 Dangers of Self Medication H V Sweringen Fort Wayne
21 Relationship in Disease Between Stomach Liver and Intestines F L. Rattermann Cincinnati
22 Advertisement of Venereal Cures in Public Press D R Silver Sydney, Ohio

St. Louis Medical Review

July

23 *Blood Pressure and Its Relation to Disease. F W Froehling, Kansas City Mo
24 Is the Induction Machine Commonly Called Static of any Therapeutic Value? H N Chapman St. Louis
25 *A Little Human Milk J Zahorsky St. Louis

23 **Blood Pressure**—Froehling gives a good picture of the present standing of the blood pressure question, illustrating certain points by personal experience For instance, he values the use of the sphygmomanometer not only for diagnosis, but for prognosis, in Bright's disease, and he has often been able also to make the diagnosis of Bright's disease by means of Sahli's instrument, which he considers to combine the advantages of those of Basch and Riva Rocci, before examining the urine

25 **A Little Human Milk.**—Zahorsky renews his plea, first made in *Pediatrics*, Vol II, 1901, for the addition of a little human milk to the dietary of an infant deprived by circumstances of the mother's breast Human milk can be obtained from the breast by milking, in the case of some woman who has more milk than her own child needs, into a sterilized cup or bottle, and should be treated as ordinary cow's milk, kept on ice, to be used as required. Many conditions, chiefly disorders of nutrition, are named in which the benefit of a little human milk in addition to other food is of value, e g, severe marasmus, gastroenteric infection, rickets, scurvy, laryngospasm, pneumonia, bronchopneumonia, pertussis, dysentery, the acute exanthemata, in short, in most wasting conditions

The Physician and Surgeon, Detroit

April

26 *Fatal Case of Typhoid G Dock, Ann Arbor
27 Dietetic Treatment of Bright's Disease G W McCaskey Fort Wayne.
28 The Green Stool W H Birchmore Brooklyn

26 **Fatal Case of Typhoid**—Dock describes a fatal case of typhoid and expresses the opinion that operations for perforation in typhoid fever are still not done so much as they ought to be, and for the simple reason that we are entirely too exacting in our requirements for diagnosis We wait not merely for perforation symptoms, but for peritonitis symptoms The point is not to wait until the patient has peritonitis, but the minute it is suspected he has perforation—that the infection is going through the serosa—as shown by pain or change of temperature, or leucocytosis, or rise of blood pressure, or abdominal signs—then the thing to do is what we do with ap

pathognomonic signs, pigmentation, asthenia, vascular conditions and the blood He takes the blood pressure at least three times in all suspected cases, and if it is found low, administers suprarenal extract by the mouth, 3 grains, three times a day, for three days If there is a rise of more than 10 per cent in the pressure, the probability that the patient suffers from adrenal insufficiency approaches a certainty In regard to the blood, the opsonic index of the serum for the tubercle bacillus may be taken, as tuberculosis is the commonest cause of the destruction of the capsule

26 **Seasickness**—Lund affirms the unanimity of opinion as to the central origin of seasickness, and with regard to the diversity of opinion as to the origin of the stimulus concludes (a) Strictly speaking, the vomiting is not due to the unusual impression of vision, as it occurs in some people on land, it occurs even when the eyes are closed, and the blind suffer as much as, if not more than, sighted people (b) It is not due to smell. Any bad or unpleasant odor may cause vomiting This cause is common to people on land or sea, in fact, to any or all, including deaf mutes, who have sensitive nasal organs (c) It is not due to momentary displacement of viscera which seems to occur in swinging, or in descending in a lift The sensation is present whether the eyes are open or closed, but it does not occur in deaf mutes (d) There is some mechanism in the auditory organ, possibly the system of semicircular canals, which is directly affected by the oscillations of a vessel at sea, and which acts as a stimulus to the vomiting center [The suggestion that seasickness is due to the disturbance of the perilymph of the semicircular canals was made by J A Irwin, The Pathology of Seasickness, *Lancet*, 1881, ii, p 907—Ed]

Journal of Tropical Medicine and Hygiene, London.

August 1

31 *Description of Diplococcus Found in the Lesions of Severe Chronic Pemphigoid Disease of West Africa. F C Wellman
32 Palliative Treatment of Elephantiasis A Castellani
33 Plague. W J Simpson

31 **New Diplococcus**—Wellman has isolated from the vesicles of a peculiar severe pemphigoid disease in West Africa a diplococcus differing as to pathologic effect from the organism described by Clegg and Wherry, and Almquist, and culturally and morphologically from those isolated from pemphigus by Matznauer and Leiner, for which he proposes the name *Micrococcus dermolyticus*, *sp nov*

Australasian Medical Gazette, Sydney

June 20

34 Insanity in Every-Day Practice S H R. Montgomery
35 *Peripheral Neuritis Due to Lead Poisoning in Children J M Gill
36 Intubation and Tracheotomy J K. Couch
37 Fever in Pulmonary Tuberculosis F C Griffiths
38 Incontinence of Urine Cured by Ventrofixation of Uterus W T Chenhall
39 Two Ruptured Tubal Pregnancies in Same Patient Within a a Year Æ J McDonnell
40 Two Postmortem Abnormalities. N A W Conolly
41 Case of Multiple Myomectomy F J T Sawkins
42 Fracture of Anterior Fossæ of Skull H E Pridham

35 **Lead Poisoning in Children.**—Gill reports three cases, and says that the symptoms of lead poisoning in children in some respects differ from those in adults He cites as characteristic symptoms extreme tenderness on pressure over the affected nerve, that the lower extremity is much more affected than the upper, that the blue line on the gums may be absent if the teeth are clean and free from tartar, and that permanent damage to the brain may result, the acute stage being sometimes accompanied by severe convulsions

British Journal of Children's Diseases, London

July

43 Treatment of Common Tuberculous Affections in Children C R Keyser
44 *Peculiar Outbreak of Erythema Nodosum W L Symes
45 Cases of Congenital Anomalies in Children J Allan
46 Thrush and Its Severer Effects J G Sharp

44 **Erythema Nodosum**—Symes reports in brief 13 cases, 12 of which occurred in one of the homes for children with which he is connected He emphasizes the following points 1, It may become a serious and dangerous disorder, 2, it is sometimes epidemic, 3, it appears to be infective, 4, endocarditis may arise during its course, 5, it may quickly be followed by meningitis

Presse Médicale, Paris

47 (Nos 48 55) *Penetration of the Intact Skin by the Tubercle Bacillus (Penetration du bacille tuberculeus par la peau intacte) V Babes
48 *Time of Leaving Bed After Normal Labor (Etude sur lever précoce après l accouchement physiologique) L. Bouchacourt
49 *The Liver in Heart Disease (Recherches sur foie cardiaque) A Bauer
50 Cardiac Reflex of Abrams (Reflexe Cardiaque) J Heitz
51 Latero lateral Anastomosis in Intestinal Surgery (L anastomose latero laterale en chirurgie intestinale) E Bougon and P Derocque.
52 Thiosinamin in Deafness (Traitement de la surdite) M Lermoyez and G Mahu
53 *Lime and the Arteries (Lachaux et les Artères) M Loeper and P Boveri
54 *Nature of Malignant Tumors (Tumeures malignes) L Hallion
55 Diagnosis of Buccal Leucokeratoses M Ferrand
56 *Conclusions on Length of Stay in Bed After Delivery (La question de séjuer au lit des accouchées.) L. Bouchacourt.
57 *Hyperglycemia and Hyperglycystia in Diabetics (Hyperglycémie et hyperglycistie chez les diabetiques) M Labbé
58 Reaction of Eye to Tuberculin in Pulmonary Tuberculosis. Sa valur séméiologique dans la tuberculose pulmonaire) M Letulle
59 Prognosis of Surgical Intervention in Spina Bifida P Lecene
60 *Functional Relations of Stomach with Other Digestive Organs (Rapports fonctionnels de l'estomac avec les autres organes digestifs) A Frouin
61 Clinical Form and Diagnosis of Sporotrichosis Monier Vinard
62 *Ethereal Sulphates in Urine in Intoxication of Gastrointestinal Origin (Les sulfo-éthers urinaires dans l'intoxication d origine gastro-intestinale) R Brunon and M. Guerbet
63 Hypnotics with Alcohol Radicals (Les Hypnotiques à Radicaux alcoholiques) A Martinet.

47 **Penetration of Skin by Tubercle Bacilli**—Babes has experimented by rubbing the cultures from tubercle bacilli into the skin of guinea pigs In some cases the hair was simply cut away, in others the skin was shaved The bacilli penetrated the shaved skin with readiness, and in some cases were able also to penetrate the skin when the hair had merely been cut off The author regards it as probable that tuberculosis may be acquired through patches of diseased skin, although in his experiments there was no evidence of any disease of the skin at the point where the bacilli had entered

48 **Early Rising After Normal Labor**—Bouchacourt reviews the opinion expressed with regard to the disadvantages and advantages of the puerperal woman leaving the bed early after a normal labor The dangers which are encountered by this practice are divided into first, the danger of infection, this the author concludes is due not to leaving the bed, but to neglect of aseptic precautions Second, danger of arrest of the involution of the uterus Involution appears, according to various authors, to be actually more rapid after leaving the bed and to have been completed to a sufficient degree by the ninth to the twelfth day after delivery Third, danger of uterine displacement Here again he cites various authors to show that there is less danger of displacement by the movements of rising than by keeping the horizontal position Fourth, danger of embolism There is no question that sudden movements may cause the detachment of a clot closing a uterine vessel, and thus provoke hemorrhage or embolism However, Kilstner insists on the fact that in the course of his experimental researches he has not observed a single case of embolism Fifth, danger of ptosis This is undoubtedly real, and the authors who recommend leaving the bed early insist on the necessity of applying a proper abdominal bandage Among the advantages attributed to a short stay in bed are, first, a favorable influence on the digestive function, second, favorable influence on the circulation and urinary function, and third, promotion of the secretion of milk (See also abstract No 56)

49 **Liver in Heart Disease**—Bauer refers the changes in the liver in consequence of cardiac disease to the dilatation of the capillaries connected with the hepatic vein, and shows by experiments that the typical picture of the cardiac liver can be reproduced by tying the inferior vena cava in the thorax and immediately after opening the abdomen and tying the portal vein, allowing the animal to die under the anesthetic In these conditions the capillaries are found greatly dilated, the liver tissue compressed, the cells generally flattened but sometimes globular, containing neither pigment nor fatty globules

three to five hours to twenty three times the amount eliminated by the controls 4 The intravenous injection of maximum doses of sodium sulphate was found to increase the feces ten times 5 The subcutaneous injection of 2 c c of barium chlorid was found to increase the feces eliminated for the next two hours fourteen and one half times 6 Large subcutaneous or intravenous doses of all three of these salts make the feces eliminated unusually moist After barium chlorid the feces even become partially fluid 7 Fluid feces can be more easily obtained with sodium citrate when it is given by mouth because it usually takes more than 100 c.c. of an $\frac{m}{6}$ solution to produce fluid feces, and this amount is almost always fatal when given subcutaneously 8 With sodium sulphate, fluid feces are more easily obtained when the salt is given by the mouth because (a) It is but slowly absorbed from the digestive tract, and so is passed down into the cecum which it distends and the contents of which it dilutes It thus remains in contact with the walls of the digestive tract for a long time and has a chance to affect the mechanism for peristalsis and secretion which are contained in the walls (b) It is but slowly absorbed from the subcutaneous tissue, and so never reaches the wall of the digestive tract in sufficient concentration to produce its maximum effect (c) When introduced into the circulation it acts as a diuretic and is thus rapidly eliminated and never reaches the intestines in sufficient concentration and for a long enough time to produce its maximum effect before it has killed the rabbit 9 With barium chlorid fluid feces are more easily obtained when the salt is given subcutaneously than when it is given by the mouth 10 In considering the effect of any salt, it should always be borne in mind that the effect may be due to the activity of either anion or cation Magnesium sulphate acts as a purgative on account of its anion 11 All these results go to show that MacCallum's conclusions are correct The mechanism for causing purgation is in the intestinal walls and is stimulated whenever any saline purgative reaches it in sufficient concentration, no matter in what way that purgative may have been introduced into the body

Louisville Monthly Journal of Medicine and Surgery

August

86 *Current Treatment of Diseases of the Tear Passages. S G Dabney, Louisville
87 Portal Hypertension B Robinson Chicago

86 **Diseases of the Tear Passages**—Dabney concludes his article as follows 1 A simple conjunctival wash and pressing out of the tear sac will usually suffice to cure dacryocystitis in the new born—the time varying from a few weeks to a few months 2 In chronic dacryocystitis, the nose should be examined and special attention given to the inferior meatus, removing obstruction and reducing inflammation 3 In mild cases cure, and in severe cases much benefit may often be obtained by syringing with cleansing and astringent agents 4 Probing is useful as an adjunct to the syringe, but it rarely curative, and if rudely performed may be injurious 5 In tedious cases, those subject to lachrymal fistula or to recurring acute attacks or to impermeable stricture, extirpation of the tear sac should be advised with the prospect of cure of the suppuration and great improvement in the epiphora.

Journal of the Michigan State Medical Society, Detroit.

August

88 Uses and Abuses of Proprietary Infant Foods. T B Cooley, Detroit.
89 *Treatment of Arthritis by Localized Passive Hyperemia. F Smithies Ann Arbor
90 The Future Hygiene. M Willson Port Huron
91 *The Neurotic Factor in Gastric Troubles B R. Corbus, Grand Rapids.
92 *Case of Perforation of Small Intestine with Operation and Recovery W T S Gregg Calumet

89—Abstracted in THE JOURNAL, July 13, 1907, page 181

91 **Gastric Troubles**—Corbus has found gastric trouble among the most prominent symptoms in 75 per cent of neurasthenic cases, and insists on the importance of looking more to the neurotic factor in digestive disorders It is a frequent starting point of a vicious circle

92—Abstracted in THE JOURNAL, July 13, 1907, page 179

Journal of the Medical Society of New Jersey, Orange

July

93 *President's Address Medical Society of New Jersey A Marcy, Jr, Riverton N J
94 *Oration on Surgery, Medical Society of New Jersey A Van der Veer, Albany N Y
95 *Oration on Medicine, Medical Society of New Jersey M Manges New York
96 Significance of Abnormal Stools in Early Life G R Pisek, New York

August

97 *Legality of the State Medical Examinations and Reciprocity in Interstate Medical Licensure L L B Godfrey, Camden N J
98 *Lymphatics D A Hawkes Newark N J
99 Plea for More Gentle Wound Manipulation J H Bradshaw, Orange

93—Abstracted in THE JOURNAL, July 20, 1907, page 269

94, 95, 97—Abstracted in THE JOURNAL, July 20, 1907, page 267

98 **Lymphatics**—Hawks insists on the importance of a thorough knowledge of the lymphatics for correct interpretation and successful treatment of many pathologic processes, and instances the relation of chills and fever to lymphatic and venous absorption respectively, the spread of cancer, etc.

Virginia Medical Semi-Monthly, Richmond.

August 9

100 *Unclassifiable Fevers J Tyson Philadelphia.
101 Traumas of the Brain J S Horsley Richmond
102 Functional Disorders of the Biliary Secretion and Their Treatment. H Richardson Baltimore
103 Report of a Frightful Vesicovaginal Rupture, Menstruation Suspended R S Hill Montgomery Ala
104 Bier's Treatment with Hyperemia C R Robins Richmond.
105 Treatment of Trifacial Neuralgias W S Wiatt East St Louis Ill
106 Principles of Surgery (Continued) S McGuire Richmond

100 **Unclassifiable Fevers.**—Tyson reports six cases of anomalous febrile conditions, and discusses their classification, deciding the first to be simple continued fever, notwithstanding its resemblance to typhoid fever, paratyphoid, cerebrospinal and syphilis, respectively The second may have been a case of influenza, no positive diagnosis could be made, and so on He reports the cases in support of a plea for the retention of the terms "simple continued fever" and "ephemeral fever," to cover those instances of fever that do not admit of classification under the ordinary divisions

Annals of Gynecology and Pediatry, Boston.

August

107 *Buttermilk as a Food for Infants F H Allen Boston
108 Atypical Typhoid E V Sullivan, Lawrence Mass.

107 **Buttermilk for Infants**—Allen says that buttermilk has been used more than 100 years as a food for infants in Holland, and even in Germany it has been used with much success for five years, though in America its use is little known He describes the preparation, composition, indications and contraindications for the use of buttermilk, the method of feeding with it, and the results of following its use The theoretical objections to buttermilk as a rational food for infants are certainly strong, for a mixture more unlike breast milk it would be hard to imagine, yet the clinical results do not support the theoretical objections in this (as in many other) cases The buttermilk was tried almost entirely on patients suffering with gastrointestinal disturbance, 127 receiving it during a period of from three to twenty days Of these, 84 showed marked improvement It appeared to have some slight favorable effect on the vomiting and in some cases to cause a fall of temperature A gain of body weight was found in a proportion of cases

Colorado Medicine, Denver

July

109 The Deviated Nasal Septum in Causation of Respiratory Diseases A R Solenberger Colorado Springs Colo
110 *Ocular Headaches E W Stevens Denver
111 *Acute Suppurative Otitis Media and Mastoiditis. W C. Bane, Denver
112 Hygiene of the Upper Air Passages. C F Cooper Denver
113 *Importance of Early Recognition and Treatment of Squint. J M Foster Denver
114 *Consideration of the Principles of Infant Feeding A G Taylor Grand Junction

110, 111, 113—Abstracted in THE JOURNAL, Oct 20, 1906, page 1321

114—Abstracted in THE JOURNAL, Oct 20, 1906, page 1404

Texas State Journal of Medicine, Fort Worth.

July

115 Thirst Cure. J W Scott, Houston Texas.
116 Hydrotherapy J M. Frazier, Belton, Texas

72 *Intraureteral Method for Causing Expulsion of Impacted Ureteral Calculi per vias naturales (Lösung eingeklemmter Harnleitersteine und ihrer Herausbeförderung) R. Jahr
73 *Laughter Induced by Examination of Eye. (Lachen vom Auge ausegelöst.) O Neustätter
74 *Argyroid Coloration of Hair (Argentoide Haarverfärbung) W Ipsen
75 Haines Test for Sugar in the Urine. (Hainesschen Lösung) R Schwarz
76 *Test for Pentose in Urine E Kraft.
77 *Removal of Placenta (Nachgeburtsoperationen) H Sellheim
78 Pharmacology of Oxybenzyltannin (Pharmakologische Verhalten) H Hildebrandt
79 Practical Experiences with Oxybenzyltannin (Praktische Erfahrungen) O Baumgarten
80 *Relations of Medulla Oblongata to Pupil L Bach
81 *Massage by Rhythmic Pressure After Intra abdominal Operations (Rhythmischen Druck) G B Schmidt
82 Congenital Functional Defects in Cranial Motor Nerves (Funktionsdefekte der motorischen Hirnnerven) R. Neurath
83 *Scopolamin Narcosis in Obstetrics and Influence of Drug on Child Skopolamindammerschlaf in d Geburtshilfe) E Holzbach
84 *Mesenteric Lymph Glands in Treatment of Sclerodermia (Mesenterialdrüsen) Schwerdt.
85 *Hereditary Transmission of Squint (Schielens) v Sicherer
86 Case of Cerebral Fat Embolism Associated with Tetanus (Zerebraler Fettembolie, kombiniert mit Tetanus) Jähne and Schmidt
87 *New Saccharometer in Testing Urine for Sugar (Gährungsrohrchen) O Schumm
88 *New Gastric Sound for Roentgenization of Stomach (Magensonde für Röntgenzwecke) W Gross
89 Does Lumbar Injection of Stovain Influence Motor Functions of Intestines? (Beeinflusst Stovaïn die motorischen Funktionen der Eigenweide?) M Penkert
90 Etiology of Cancers and Tumors in General (Krebses u Geshwülste im allgemeinen) H Spude
91 Typhoid and Colon Sepsis Typhoid as Endotoxin Disease E Stadelmann and A Wolff-Eisner
92 *Diphtheritic Phlegmons of Skin (Hautphlegmone) O Ehrhardt
94 *Sauerbruch s Pneumatic Cabinet. (Druckdifferenzverfahren) W Kausch
95 Phosphaturia in Gonorrhea M Oppenheim
96 *Therapeutic Use of Human Gastric Juice (Menschlichen Magensaftes) E Rosenberg
97 Favoring Healing (Heilungsvorgänge beschleunigen) Helle
98 Treatment of Antrum of Highmore in Chronic Sinusitis (Kieferhöhle bei chronischer Sinusitis) F Kretschmann
99 *Angina at End of Pregnancy, Followed by Fatal Streptococcus Septicemia During Puerperium (tödlicher Streptokokkensepsis) H Merkel
100 Intralobular Serous Pleurisy Seuffer held
101 Fatal Mercurial Poisoning (Quecksilberintoxikation) J F v Crippa and F Feichtinger
102 *Aseptic Catheterization by Means of Special Apparatus (Katheterizator) H Markus
103 Urinalysis by General Practitioner (Harnuntersuchungen in der Praxis) H Engel
104 Artificial Hyperemia in Frostbite (Künstliche Hyperämie) C Mirtl

65 **Cerebrospinal Syphilis**—Tiedemann and Nambu report a case which they diagnosticated as one of cerebrospinal syphilis on the ground of a syphilitic history, and which showed temporary marked improvement under antisyphilitic treatment The symptoms consisted in gradual atrophic paralysis of the extremities, with increased reflexes, disturbances of the bladder and rectum, shooting pains, and tenderness of the muscles and nerve trunks, with which an extreme hyperesthesia of the skin was associated at the end of the disease Besides this, there were marked ataxia of the arms and legs, and occasional attacks of obstinate vomiting closely resembling the gastric crises of tabetics The appearance of gastric disturbances in cerebrospinal syphilis, the authors have never found recorded The pathologic appearances consisted of inflammation of the meninges, thickening of the walls of the vessels and some softening of the nerve tissue In the spinal cord there were degenerations of the posterior columns of the cervical lumbar cord The authors regard the changes as due to a syphilitic process The *Spirochæta pallida* could not be found This is of little consequence, they state, considering the age of the syphilitic affection, though no micro organisms were contained in the meninges

67 **Radical Operation in Enormous Inguinal Hernias**—Sauerbruch maintains that hernias of unusually large size may be operated on safely and without bad results After a preliminary treatment consisting of absolute rest in bed with the foot of the bed elevated, careful dieting and elimination, extending over a period of about two weeks, the operation is done under spinal anesthesia A large incision is made so as to give easy access to the field of operation, and the hernial sac, it is emphasized, must not be disturbed in any way This, the author claims, will prevent the formation of postoperative hematomas The sac is closed with three or four purse string sutures The large opening usually found in such cases is closed by means of the rectus muscle A portion of this muscle is separated from the lateral side of the whole muscle, and its lower end or insertion into the symphysis is separated from its attachment, including the periosteum This portion of muscle is then passed directly in front of the hernial opening and sutured to Poupart's ligament The cord is first transplanted In male patients over 60 years of age castration is advised The operator may, if desired, close the defect created by the removal of a portion of the rectus muscle by a periosteal flap taken from the pubic bone, as is done in some cases of femoral hernia An ordinary gauze collodion bandage is applied, and the patient is kept in bed for two weeks, when healing, under ordinary circumstances is complete All patients operated on in this manner have done well There has been no recurrence

68 **Transplantation of Goiter**—With a view to producing goiter experimentally, Pfeiffer transplanted the ordinary goitrous thyroid, and the exophthalmic thyroid into the spleen of animals, using female dogs for this purpose The pieces of thyroid were laid into slits made in the spleen, and the hemorrhage was checked by means of sutures placed so as to avoid the piece of thyroid tissue In four out of six cases it was possible to demonstrate the thyroid tissue in the spleen at necropsy In two cases no remnant of thyroid tissue remained In four cases there were prominent follicles filled with colloid material In all the animals the pulse was increased in rapidity, and in the case of the three animals into whom the thyroid of an exophthalmic goiter was transplanted the pulse rate was 180 In the four animals in whom the thyroid tissue was demonstrable in the spleen, the pulse rate remained high, so that the increase in the pulse rate could not be ascribed to the operation In one case the necropsy was held 127 days after the transplantation of the thyroid tissue

70 **Atypical Epithelial Growth.**—Stahr confirms the results obtained by Fischer in the experimental production of atypical epithelial growths, but he says that in order to obtain these results it is necessary to make use of the oils employed by Fischer, as soot, tar, xylol paraffin, etc, failed to cause proliferation of the epithelium Although Stahr is not prepared to accept Fischer's conclusions, he thinks that his work is a decided step in advance in the study of carcinoma, and further investigation may yield valuable results

72 **Expulsion of Impacted Ureteral Calculus**—After having tried all known methods to relieve a persistent anuria caused by the impaction of a calculus in the ureter, Jahr finally made use of a catheter whose tip was capped with a distensible piece of rubber, something like Nitze's ureteral occlusion catheter The catheter was passed up to the stone, the rubber bulb was then inflated, so as to distend the ureter sufficiently to permit of the free passage of the urine around the stone, and the attempt was successful The stone again became impacted lower down, but a resort to the same procedure again proved successful

73 **Laughter Induced by Ophthalmoscopic Examination**—Neustätter reports five cases, occurring in three females and two males, of reflex laughter, excited, apparently, by an examination of the eye Every other cause for laughter was excluded, and as one of the male patients was aged 45 years, the author feels justified in ascribing the laughter to the eye examination

74 **Argyroid Coloration of Hair**—Ipsen describes the case of a man, whose hair was of the color usually seen in the skin in cases of argyria The hair of all parts of the body had that peculiar grayish brown color, with the silver gray shimmer so characteristic of silver poisoning It was ascertained that the hair had been of this color since birth, and that the patient's mother and sister were similarly afflicted

76 **Pentose in Urine**—Kraft urges that every suspicious urine be examined for pentose He employs Bial's method.

77 **Removal of Placenta**—In order to give to the practitioner the knowledge necessary to remove a placenta properly Sellheim advises that students of medicine and young practi

Bauer does not deny that changes may take place in the liver cells in the course of cardiac disease, and influence, to some extent, the resulting lesion. But, in his opinion, the dilatation of the hepatic capillaries is the principal cause of the changes found.

53. **Lime and the Arteries.**—Loeper and Boveri hold that the bones are the natural outlet for an excess of calcium in the body fluids. As the organism grows older this outlet is limited, and the tendency to deposition in the walls of the arteries is increased. Animals whose tissue fluids are saturated with calcium salts are especially susceptible to the action of poisons affecting the vessels, and such poisons, especially adrenalin, they state, cause the deposition of the calcium in the arterial walls if the blood is rich in calcium salts. Comparative experiments with rabbits fed on food rich in calcium salts, such as cabbage, showed that they acquired calcification of the arteries much sooner than did control animals fed on potatoes or other food poor in lime. Artificial calcification of the arteries can not be induced in pregnant females because the excess of calcium is transferred to the fetus. The excess of calcium salts can not be said to cause calcification, but predisposes to it.

54. **Nature of Malignant Tumors.**—Hallion criticises the theory of Dungern and Werner that cancer can be caused by an exaggeration or combination of irritants, and regards it as insufficient, because the almost infinite difference between the slight proliferation caused by simple irritation, and the progressive changes characteristic of malignant growths, indicates a similar difference in cause. Hallion adheres to his theory of a sort of fecundation of one cell by another.

56. **Conduct of the Puerperium.**—Bouchacourt concludes that the woman should be permitted considerable freedom of movement during her stay in bed, and should not be restricted to the dorsal decubitus position. Gymnastics or passive movements are advised by some authors. The length of stay in bed should be suited to the character and social station of the patient, and the gravity of the case. From one week to two weeks is sufficient in normal cases. The patient, after leaving bed at first, should rest on the couch, but may soon be allowed to walk about the room, and may go out, preferably in a carriage, at the end of three weeks.

57. **Hyperglycemia and Hyperglycystia.**—Labbé thinks that not enough emphasis has been placed on the saturation of the blood and tissues of diabetics with glucose as the cause of the symptoms exhibited. He divides diabetics into two classes: 1. Those in whom the origin of glycosuria is exclusively alimentary and, 2, those who form glucose from the albumin and fat ingested, or even from their tissues. In the first class there is a defect in the ability of the organism to burn sugar, and it accumulates in the tissues and in the blood. An excess of sugar in the tissues is termed hyperglycystia, and the excess in the blood hyperglycemia. Diabetics differ in their power to oxidize glucose, and the retention in the tissues begins when the amount of carbohydrates ingested is greater than that which they are able to oxidize. The accumulation of glucose in the tissues does not immediately produce any symptom, but when a maximum is reached, its excretion by the kidneys begins showing glycosuria. The necessity for an increase of fluids results in polydypsia and polyuria. The nervous symptoms follow in consequence of the saturation of the tissue fluids with glucose. The retention of glucose in the tissues explains the fact that glycosuria does not immediately follow the ingestion of an amount of carbohydrates above the degree of tolerance. On the other hand, the fact that glycosuria still continues after the reduction of the amount ingested below that which can be tolerated, is explained by the gradual excretion of the glucose, which had accumulated in the system. Sometimes this excretion is so slow that glycosuria continues for an indefinite period, but is finally removed by absolute avoidance of carbohydrates. Labbé says that it is not necessary, therefore, to conclude that the excretion of a small amount of sugar after carbohydrates have been entirely excluded from the diet indicates that sugar is formed from fat or albumin. He has calculated that the organism of a diabetic weighing 60 kilograms (132 pounds) may contain in the body fluid, the liver and the muscles a quantity of carbohydrates in the form of glucose and glycogen equal to 678 grams (22.6 ounces). The ability of the organism to deposit glucose in the form of glycogen may modify the effects of the ingestion of an excess of carbohydrates. Experiments made by von Noorden have shown relative poverty in glycogen in the liver and muscles of diabetics. The author suggests the possibility that glucose is retained in a form of carbohydrate differing from glucose and from glycogen. The treatment of these conditions is at present exclusively dietetic.

60. **Relation of Stomach to Other Organs.**—Frouin reports some interesting results of the removal of the stomach with the view to determining whether the stomach is essential to life or exerts any influence on other organs by internal secretion. He removed the stomach completely from dogs and succeeded in keeping them alive for months and in one instance for five years. Although the animals continued to live it was possible to demonstrate certain changes which show that the function of the stomach is not simply to serve as a reservoir for the food. In these dogs from which the stomach had been removed, for from three months to five years, there was a notable distension of the abdomen. At the autopsies more or less intense congestion of the liver was found, and sometimes a hypertrophy of this organ. In the animal which lived five years there were numerous small cysts in the kidneys and an abscess in the cortical portion. Frouin attributes these changes to the removal of the stomach. In normal animals it is possible to recover pepsin from the various organs, but in animals from which the stomach has been removed no pepsin can be found in the organs. It has been shown that the ferment is produced in the stomach and absorbed from it into the blood. Frouin believes that this ferment is useful in the intracellular fermentations, and that the metabolism will suffer to a greater or less extent when the organ is removed. He reviews the production and action of secretin, and explains that while the acid secretions of the stomach are active in producing secretin, there are other substances which have a similar action, for instance, soaps. Fleig has found that alcohol produces secretin, consequently when the stomach is removed the pancreatic and other digestive secretions are stimulated in such a way as to replace the digestive action of the stomach.

62. **Ethereal Sulphates in Gastrointestinal Putrefaction.**—The conclusions of Brunon and Guerbet are: 1. The coefficient of intestinal fermentation is the relation of the ethereal sulphates of the urine to 100 parts of total urinary nitrogen estimated in SO_3. 2. As a result of experiments made by one of the authors on healthy individuals, this coefficient is often less than 1, and never passes 1.4. Diets such as milk, vegetarian, mixed or meat, do not affect this result. 3. On the other hand, in patients in whom one suspects hepatic or renal insufficiency (except in the case of uremia, in which it tends to be depressed), this coefficient may serve to measure the degree of alimentary intoxication. It exceeds 1.4 and may reach a very high figure. In their observations this elevation of the coefficient almost always coincided with a slight albuminuria. 4. The diet has a very marked effect on the coefficient, the vegetarian or milk diet associated with absorption of lactic acid ferments lowers it. 5. Clinical improvement has always been observed in these cases. 6. The determination of the coefficient of intestinal fermentation is a simple clinical procedure. This coefficient is capable of giving the physician useful practical indications for diagnosis, prognosis and dietetic treatment.

Münchener medizinische Wochenschrift

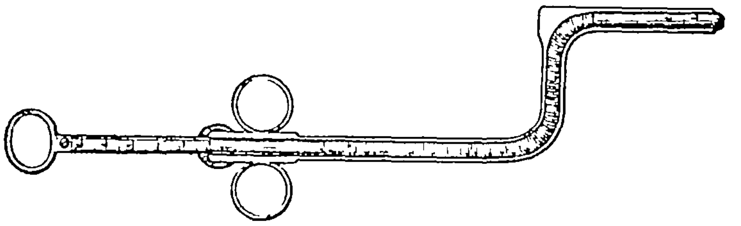
64 (LIV, Nos. 24-25.) Typhoid and Colon Sepsis. Typhoid as Endotoxic Disease. (Typhus als Endotoxinkrankheit.) E. Stadelmann and A. Wolff-Eisner.
65 *Cerebrospinal Syphilis. (Lues cerebrospinalis.) Tiedemann and Nambu.
66 Differential Diagnosis of Pathogenic Streptococci. W. H. Schultze.
67 *Radical Operation in Enormous Inguinal Hernias. (Ueber grosse Leistenhernien.) Sauerbruch.
68 *Transplantation of Goiter and Experimental Exophthalmic Goiter. (Kropfverpflanzung.) C. Pfeiffer.
69 A Diagnostic Symptom of Appendicitis. M. Blumberg.
70 *Atypical Epithelial Growth and Carcinoma. (Epithelwucherungen.) H. Stahr.
71 Green Stools in Nurslings. (Grüner Stühle beim Säugling.) A. F. Hecht.

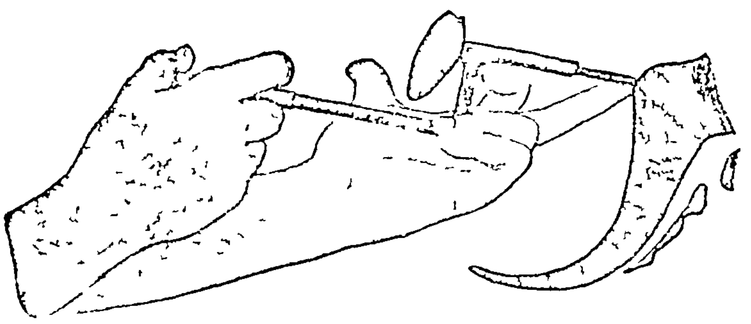
edematous An interesting feature in the case was the fact that there existed a heart rudiment Otherwise the specimen was in keeping with others previously described

107 **Typhoid During Pregnancy**—In the case reported by Rosenfeld the delivery occurred during the prodromal period or stage of the typhoid infection, complicating the diagnosis of the infectious disease very considerably During the course of the typhoid the cardiac symptoms were so prominent as to lead the observer to suspect that the case really was one of endocarditis due to sepsis from the genital tract Not until about the tenth day was it possible to obtain a positive Widal test, and then, too, other symptoms of typhoid were manifested The patient went through a typical attack, but suffered two recurrences The typhoid did not interfere with the favorable course of the puerperium

108 **New Abdominal Binder**—Alberts uses a bandage made of the usual elastic webbing, with a firm but adaptable back brace made of soft leather and stays Two straps cross the chest, pass over the shoulders, again cross and button to the leather back brace Two leather garters pass from the lower edge of the binder to the stockings

109 **Measuring Conjugata Vera**—Zweifel has devised an instrument for measuring the conjugata vera which appears to be simple of construction and yet very useful It consists of a metal tube in which rests a pliable metallic spring made of German silver, carrying at both ends a graduated scale Figure 1 represents the instrument and Figure 2 the instrument in use





110 **Intrauterine Cry**—Richter reports a case in which it became necessary to do a version in order to effect delivery, and as soon as the knee of the child had passed through the vulva there was heard very distinctly the cry of a child apparently coming from within the abdomen of the woman, which was shortly followed by another in the same tones but somewhat muffled

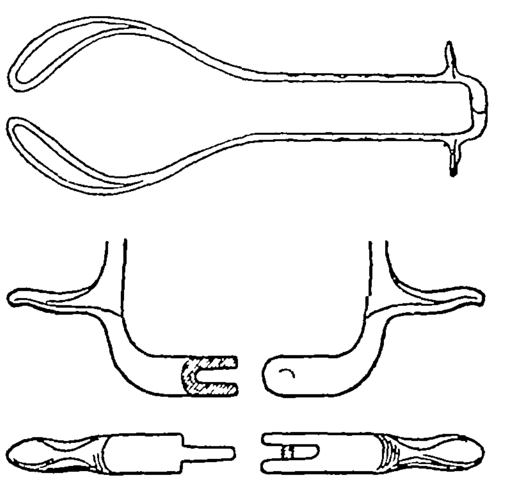
111 **Id**—Teufel believes that the so called intrauterine cry is caused by an inrush of air into the amniotic sac, the return of the air being prevented by the presenting part

113 **Renal Decapsulation in Eclampsia**—Gauss reports two cases In one immediate improvement followed the decapsulation, while in the second case the operation was ineffective and the patient's condition remained unchanged until after the uterus had been emptied

114 **Pubiotomy in the Home**—Sigwart is convinced that pubiotomy can be performed in the patient's home with equal facility and safety as in the hospital He uses Bumm's needle and has in readiness as a precautionary measure several needles armed with catgut and gauze for tamponade He reports five cases in which the results were all that could be wished for Sigwart considers Bumm's needle an ideal instrument from every standpoint for performing pubiotomy

115 **Artificial Anus in Ureteral Implantation into Rectum**—Kronig reports a case of extensive sarcoma of the uterus, vagina, bladder and urethra in which it was necessary to transplant the ureters into the rectum In order to prevent the occurrence of an ascending infection and a consequent coli pyelitis, an artificial anus was made Continence is said to be perfect and a clear urine is voided every two or three hours The patient feels well and is attending to her household duties as before No dates are mentioned, but the author says that the case is too recent a one to warrant making any positive conclusions, but thus far he believes that the result obtained warrants a repetition of the procedure in similar cases

117 **New Obstetric Forceps**—The forceps devised by Boerma is modeled after Naegele's instrument, but locks at the extremities of the handles instead of near the middle The blades of the forceps are built as usual Traction is made with one hand or both hands on the lock in the handle and on two projections, one on the outer side of each handle, as shown in the illustrations The instrument is intended for use in cases in which the advancing head is impacted in the pelvis



118 **Hernia Following Pubiotomy**—Hartmann reports a case of pubiotomy which three weeks afterward was followed by the development of a hernia during an attack of bronchitis It was found that the bone ends were separated sufficiently to admit a finger, and that when the patient coughed the bladder protruded into the opening between the bone ends, and the intestine was forced down into the inguinal canal, a typical inguinal hernia The bone ends were brought together and sutured, the inguinal canal was closed by a radical operation, and the patient made a complete recovery The hernia is ascribed to the failure of the bone ends to unite

124 **Hemorrhage at Menopause**—Four cases are reported by Meyer Ruegg of women who suffered considerable inconvenience from hemorrhages at the menopause In each case the cervical canal was found to present a spindle shaped dilatation, the apex of the spindle being directed downward On dilating the os a considerable amount of blood, clots and shreds was poured out, and there was no further sign of hemorrhage afterward The author suggests that all such patients be examined carefully for the cause of the hemorrhage

125 **Inoperable Carcinoma of Uterus**—Weindler reports three cases of inoperable carcinoma of the uterus in which a thorough curettage was done, the cavity was cauterized with the actual cautery and then swabbed with concentrated carbolic acid The result was an unexpected one The patients recovered from the symptoms caused by the tumors, and there has been no recurrence after five and six years respectively The diagnosis was confirmed microscopically The three patients are entirely well and are attending to their household duties

127 **Extra-Amniotic Development of Fetus**—Wiemer reports a case of hydrorrhea gravidarum in which the amniotic fluid began to empty itself a considerable time before the beginning of the labor After the birth of the child it was found that its size was out of all proportion to the size of the amniotic cavity, so that the author took it for granted that the sac had ruptured when the fluid first began to be discharged from the vulva, and that the development of the

tioners practice its removal on the cow He has found this particularly useful inasmuch as the conditions in the cow are very similar to those existing in the human female

80 **Relations of Medulla Oblongata to Pupil**—By means of experiments on monkeys, cats and rabbits Bach has been able to demonstrate that the reaction of the pupil-to-light is not affected by a decapitation, except when the medulla is destroyed as far as the fourth ventricle, when this reaction immediately disappears

81 **Massage by Rhythmic Pressure**—Schmidt has employed successfully a method of massage devised by Cederschiöld, of Stockholm, in which pressure *supplants the* usual rubbing motions The degree of pressure varies from a very light to a very heavy pressure, *and* should alternate at the same sitting It is made centripetally and the object is to remove adhesions by pressure and to exert a pump like or suction like action on the lymph *and* blood vessels It has been found that by means of this rhythmic pressure massage, hematomas, edema and extravasations are speedily removed Of course, the pressure must be regulated in the individual case It is made either with the hand encircling the part, *as* in the case of the extremities, or with the flat of the hand or the palm, when pressure is made on the abdomen or thorax Schmidt has used the method successfully after appendectomy, gallstone operations, and operations on the adnexa

83 **Scopolamin Narcosis in Obstetrics.**—Holzbach found that when hyoscin (the author uses this word in the text and scopolamin in the title) is employed during labor, that it appears in the colostrum and in the milk during the first few days, and in the urine of the child fifteen minutes after its birth He has not been able to ascertain as yet whether the child is affected in any way by this drug

84 **Mesenteric Lymph Glands in Scleroderma.**—Schwerdt reports five cases of scleroderma, in which he *made* use of the mesenteric lymph glands of the sheep with some success Some of the patients claimed to have felt better after the treatment, although *the local condition had not changed very much* In another patient the local condition had practically disappeared entirely, although no other treatment than the glands had been employed. The functions of the patient, such as digestion, were not affected disagreeably by the treatment

85 **Hereditary Transmission of Squint**—In the cases reported by Sicherer, the squint was traceable through four generations of one family The histories of the cases, and especially the ophthalmoscopic findings, are described at length

87 **New Saccharometer**—The instrument used by Schumm differs from Einhorn's in that the closed end becomes gradually attenuated. It is said to permit the estimation of the slightest amount of gas present, although it is more difficult to fill the apparatus with urine

88 **New Gastric Sound**—Gross uses the sound devised by Freund, but it is provided with end and side openings so that it can also be used as a stomach tube, and to dilate the stomach with air or fluid, if this is necessary

92 **Diphtheritic Phlegmon of Skin.**—Ehrhardt reports four cases of a phlegmonous skin affection, from which the diphtheria bacillus was obtained in pure culture. None of the patients had faucial diphtheria.

94 **Pneumatic Cabinet.**—Kausch is very emphatic in his endorsement of the value of the pneumatic cabinet, devised by Sauerbruch, in certain operations on the thorax He says that the *apparatus* can not be dispensed with, if one would avoid operative pneumothorax, and a consequent infection, nor in doing an extra pleural pneumotomy, especially when the lung is infected It can also be used with benefit when operating *for* empyema. Underpressure is preferred to overpressure

96 **Therapeutic Use of Human Gastric Juice.**—Rosenberg had an opportunity of making use of the gastric juice of a patient suffering from gastrosuccorrhea in the treatment of two cases of achylia, two of achlorhydria, and two cases of subacidity The man who furnished the gastric juice was neurasthenic, but otherwise entirely well, that is, so far as syphilis, tuberculosis and the condition of his organs was concerned He yielded from 200 to 650 c c of gastric juice every day It was filtered and used fresh, each patient receiving from a teaspoonful to a tablespoonful, four times daily, ten minutes before eating None of the patients complained of nausea, or of being otherwise disagreeably affected In most of the cases the appetite was improved and the patients gained in weight The author, however, is inclined to view the results as identical with those obtained from the administration of hydrochloric acid

99 **Angina and Streptococcus Septicemia**—The case reported by Merkel was one of angina, occurring almost at the termination of pregnancy, in a woman who had cardiac disease The labor progressed very favorably, but immediately after its termination the temperature rose and the *patient* presented all the symptoms of sepsis, from which she died on the eighth day Blood cultures showed enormous quantities of streptococci The patient admitted having had an articular rheumatism many years previously Her first seven pregnancies had been normal The last pregnancy was terminated naturally on the fifteenth day, after the woman's throat first became sore, and at no time during the period had a vaginal examination been made One interesting feature of the case was a rather severe hemorrhage, of some duration, which occurred ten hours after the termination of the labor A verrucose endocarditis was found at necropsy

102 *Aseptic Catheterization.*—Markus presents an apparatus in which catheters can be placed for the purpose of keeping them aseptic, and from which the catheter can be inserted without necessitating any handling of the instrument. The apparatus, it is said, can be sterilized easily

Centralblatt f Gynäkologie, Bonn.

105 (Nos 17 20, pp. 465-824) *Fetal Monstrosity (Hemitherium posterius) Nacke and C Benda
106 Rudimentary Organs in Female Genital Tract. (rudimentarer Organe im weiblichen Genitaltraktus) J Kocks
107 *Typhoid Occurring During Pregnancy and Puerperium (Typhus abdominalis unter Geburt u Puerperium) S Rosenfeld
108 *New Abdominal Binder (Leibbinde) Alberts.
109 *New Instrument for Measuring True Conjugate. (Neues Instrument zur Messung) Zweifel
110 *Case of Intrauterine Cry (Intra uterinem Kindesschrei) J Richter
111 *The Intrauterine Cry R. Teuffel
112 Convertible Bed for Normal and Operative Deliveries (Operations und Entbindungsbett.) P P Miklaschewsky
113 *Decapsulation of Kidney in Eclampsia. (Bei Eklampsie m Decapsulatio renum) C J Gauss.
114 *Pubiotomy in the Home W Sigwart.
115 *Formation of Artificial Anus to Prevent Occurrence of Colipyelitis Following Rectal Implantation of Ureters (Vermeidung d Colipyelitis bei Einpflanzung d. Ureteren ins Rektum) Krönig
116 Acquired Occlusions of Female Genital Passages. (Erworbenen Gynatresien) H v Derera.
117 *New Obstetric Forceps (Geburtszange) N J A F Boerma.
118 *Hernia Following Pubiotomy (Hernien in Hebotomiespalt) J Hartmann
119 Estimation of Transverse Diameter of Fetal Head During Pregnancy (Querdurchmessers d. kindlichen Kopfes) F Kermauner
120 Rudimentary Organs in Female Genital Tract. R. Meyer
121 Permanent Widening of Pelvis by Pubiotomy (Dauernde Beckenweiterung) P Wendeler
122 Varieties of Narrow Pelvis (engen Beckens) D. Scipiades.
123 Id K. Baisch.
124 *Hemorrhage at Menopause (Klimakterischer Blutungen) H Meyer Ruegg
125 *Unexpected Results in Inoperable Carcinoma of the Uterus. (Unerwartete Heilerfolge) F Weindler
126 Paravaginal Metastasis in Carcinoma Corporis Uteri (Metastase im paravaginalen Bindegewebe.) D Schick
127 *Hydrorrhea Gravidarum with Extra amniotic Development of Fetus. (Exochorialen Fruchtentwicklung) W T Wiemer
128 *Air Embolism During Labor (Luftembolie) K. Apfelstedt
129 Vaginal Operation for Prolapsed Ovary H Rose
130 *Metastatic Ophthalmia in Puerperium J Feiertag
131 Cone-shaped Vaginal Tampon (*Zapfentampons.*) L. Prochownick
132 *Substitute for Rubber Gloves. (Gummihandschuhe) Wederhake.
133 Treatment of Intractable Inversion of Uterus. (Inversio uteri inveterata.) C D Josephson
134 Habitual Death of Fetus as Indication for Induction of Labor (Habituélles absterben der Frucht.) E Zurhelle
135 Myoma of Cervix Obstructing Labor (eingeklemmetes cervicalmyom.) H Pape.
136 *Infrapubic Drainage of Bladder (*Infrasymphysären* Blasendrainage.) W Stoeckel.
137 Accidental Injury of Prolapsed Uterus (Verletzung d prolapierten Uterus) W Hannes.
138 Refilling Uterus After Rupture of Amnion (Wiederauffüllung d. Uterus nach Vorzeitigem Blasenprung) Peters.

105 **Fetal Monstrosity**—Nacke and Benda describe an extremely severe instrumental delivery of an acardius acephalus whose *cutaneous* and subcutaneous tissues were markedl

170 Hydrocele in the Female (Studio dell idrocele muliebre.) G Polini
171 Closing Lecture of the Course at the Medical Clinic for the Year 1905 6 (Lezione di chiusura al corso di clinica medica 1905 6) E Maragliano
172 Essential Paroxysmal Tachycardia (Sulla tachicardia par essenziale.) G Bacelli
173 *Agglutination of Koch s Bacillus in Relation to the Theory of Unicism (Agglutinamento dell bacillo di Koch in relazione colla teoria di unicismo) C P Goggia
174 Biologic Studies on the Exanthemata—Demonstration of Bacterial Antibodies in the Blood Serum of Patients (Ricerche biologica sulle malattie esantematiche—Dimostrazione di anticorpi bacterici nel siero di sangue di soggetti) S Livierato
175 Stovainization of Spine. (Rachistovainizzazione) U Gironi.
176 Severe Case of Osteomalacia Cured by Adrenalin Injections According to Bossi s Method. (Osteomalacia guarita con le iniezioni di adrenalina il metodo Bossi) De Tanaurri
177 Rheumatism and Chorea. (Reumatismo e corea) E De Renzi
178 *Tuberculosis of Alimentary Origin (Sulla tuberculosi di origine alimentaire) G Bonome
179 The Puerperium and Tuberculosis (Puerperio e tuberculosi) G Carli
180 *The Immunizing Action of the Cerebral Substance of Various Animals (Sulla azione immunizzante della sostanza cerebrale di vari animali) C Fermi
181 The Liver and Heterologous Albumin. (Fegato et albumine heterologiche) E Sylvestri
182 *The Caustic Action of Chlorohydrate of Quinin (Contributa all azione caustica del cloridrato di chinino) E Sylvestrini

167 **Studies on the Gonococcus**—Bruschettini and Ansaldo report encouraging results from their experiments in the culture of gonococcus They used media containing blood and white and yolk of egg The virulence of the germs was also markedly increased, and they report, without going into details, which are promised in a future memoir, that they have succeeded in obtaining an aggressin from the gonococcus which not only shortens the incubation period of the disease, but also causes death when injected in a culture that by itself would be incapable of producing this result in the animal

168 **Autoserotherapy**—Without being able to reproduce such brilliant results as those claimed by Gilbert with his method of autoinjection of pleuritic fluid into the patient's subcutaneous cellular tissues, under aseptic precautions, Jona finds the method worth employing in exudative pleurisy, especially in cases of recent date He tabulates 15 cases thus treated, in which the time required for absorption of the fluid varied from six to thirty-four days The number of injections varied from one to four Nine were cases of tuberculous pleurisy, one case was traumatic The cases longest in reabsorption were all of some standing and resistant to other treatment In all save two the injections were followed by a marked increase in the urinary excretion, excitation of which seems to be the method of their action

173 **The Unity of Tuberculous Infection.**—Goggia has tested the agglutinating power of the sera of various animals, dogs, guinea pigs and rabbits, with also that of man, on the tubercle bacilli of the disease in the same and other species, using cultures as nearly as possible identical, as regards the number of bacilli to each unit of volume, and employing all due precautions as to exactness of comparison. The results are given in tabulated form and support the view that the germs, while modified by the environment, are practically identical in the different species

178 **Tuberculosis of Intestinal Origin**—From his clinicopathologic observations, covering about 129 autopsies of cases with tuberculosis of the alimentary tract and his experimental studies, Bonome concludes that tuberculosis infection may originate in the alimentary tract in a considerable proportion of cases In nearly 17 per cent in his autopsies of tuberculous patients the primary infection was in the alimentary tract, usually in the intestine or the mesenteric annexes, and much more rarely in the upper tracts, the mouth, pharynx, esophagus, etc. In experimental oropharyngeal infection in animals the rapid involvement of the submental, submaxillary and cervical lymphatics was noticeable, and the bronchial glands and lung are later involved In experimental aerial infection the bacilli were almost always arrested in the nasal, buccal or pharyngeal mucosa, and reached the air passages only with difficulty Infection of the upper digestive tract is, therefore to a certain extent the same as infection by inhalation In most cases of undoubted primary alimentary tract infection there was also found at autopsy an acute miliary eruption in the lungs (hematogenous infection) and
lymphogenous nodular peribronchial infection
fording opportunity to observe infection absol
the intestine or mesenteric glands are rare The
lus does not lose its virulence by arrest in the mese
glands Primary intestinal tuberculosis is most frequ
infants and in children up to 16 years of age, in wh
reaches the proportion of 23 per cent of all cases Betw
and 55 it constitutes 16 per cent, and is rarer still in th
in whom Bonome finds it in only 6 25 per cent No dif
was observed in the intestinal lesions according to ag
those in the mesentery were usually more severe in the
than in the aged The alterations of the mesenteric
consist in a primary hyperplasia with secondary caseous
eration, a point of some importance in so far as it in
that the infective agent, the bacillus, reaches the glan
way of the chyliferous apparatus The primary int
lesion is not always discoverable at autopsy, but in Bo
opinion this does not necessarily support Behring's cont
that the bacillus may penetrate the intact intestinal
especially in infants He is more inclined to recognize th
sibility that the primary microscopic lesions may heal w
leaving traces The local lesion, in his experiments, var
severity according to the condition of the virus and the s
of the animal experimented on Similar variations pro
occur also in the spontaneous infection in the human s

180 **The Immunizing Action of the Cerebral Substanc**
this preliminary communication Fermi states the results
periments made to ascertain more particularly the specia
stances to which are due the immunizing action against r
previously demonstrated by him to be shown by the ce
substance of rabbits, dogs, sheep and cattle He finds in
later studies that the immunizing effects of the norma
ous substance varies according to the species from whic
derived The lipoid substance possesses in varying deg
certain immunizing action against rabies, but always in
to that of serum and antirabic vaccine Cholesterin and
thin, however, are not endowed, according to his experin
with the lyssacidal action claimed for cholesterin by Aln
nor do they possess any bactericidal power, so far as s
by these experiments

182 **Chlorohydrate of Quinin as a Caustic**—Sylvestrin
employed chlorohydrate of quinin in a number of cas
phagedenic ulceration, neglected wounds, whitlow, etc,
excessive granulations, with excellent results He finds
valuable substitute for nitrate of silver, it has a profo
caustic effect without the discomfort to the patient caus
the silver application

Books Received

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and this will be deemed by us a full equivalent to those se
them. A selection from these volumes will be made for revie
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Second Annual Report of the National First Aid Ass
tion of America. Paper Pp 66 6 Beacon St., Boston,
1907

Hygienic Laboratory Bulletin No 38 Influence of Anti
in Postdiphtheritic Paralysis, by M J Rosenan and J F And
Paper Pp 34 Washington Government Printing Office, 19

Thirty third Annual Report of the Secretary of the
Board of Health of the State of Michigan for the Fiscal Year
ing June 30 1905 By Authority Cloth Pp 211 Lai
Mich Wynkoop, Hallenback Crawford Co, 1906

Practical Treatise on Fractures and Dislocations by Lew
Stimson B A., M D, etc Professor of Surgery in Cornell Unive
Medical College New York Fifth Edition, Revised and Enlarg
Illustrated Cloth Pp 847 Price, $5 00 New York and Phil
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Manual of Clinical Diagnosis by Means of Microscopic an
Chemical Methods for Students, Hospital Physicians and Practi
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Pathology at the Baltimore Medical College Sixth Ed
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Text Book of Physiologic Chemistry for Students of Me
and Physicians By Charles E Simon B A., M D Profess
Clinical Pathology at the Baltimore Medical College Thir
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fetus was continued outside of the membranes Two months elapsed between the first appearance of the fluid and the labor

128 Air Embolism in Labor—In the case reported by Apfelstedt the air embolism, which proved fatal, occurred as the result of a partial detachment of the placenta during the progress of the labor The child was dead when delivered, and the mother died half an hour after the labor with all the symptoms of cardiac distress due to air embolism A careful examination of the uterus failed to disclose a rupture

130 Metastatic Ophthalmia.—Feiertag reports a case of metastatic ophthalmia occurring during the puerperium as the result of septic endometritis Only one eye was affected and enucleation was advised but deferred because of the ocular pain of which the patient complained The patient was still under observation at the time of writing, and her general condition was good

132 Substitute for Rubber Gloves—Wederhake uses an iodin rubber solution with which he gives the hands a coating after they have been prepared in a solution of iodin one part, and carbontetrachlorid 1,000 parts The exact composition of the iodin rubber solution is not given, as it is said not to have been determined exactly It is said to give a coating that is safe, effective and easily made

136 Infrapubic Drainage of Bladder—Stoeckel employs a trocar catheter which is passed into the bladder between the pubis and the urethra, thus lying above the field of operation and not in contact with it He uses a catheter modeled after that of Skene but made of metal, into which is passed a curved trocar

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139 Leprosy in Canton Wallis (Lepra) Jadassohn and A. Bayard.
140 Localization of Aphasia (Aphasie) H. O Schlub
141 *Lumbar Puncture in Persons Mentally Affected. (Geisteskranken) E. Fankhauser
142 Leprosy in Canton Wallis (Concluded) Jadassohn and A Bayard
143 *Subcutaneous Ruptures of Liver (Subkutane Leberrupturen) P Schönholzer
144 Determination of Viscosity of Blood (Viskosität.) W Hess.
145 Id. K Kottmann.
146 *Two New Instruments. K. Köhl
147 The Physician and Lodge Practice. (Krankenversicherung) Häberlin
148 Early Diagnosis of Pulmonary Tuberculosis. (Frühdiagnose.) G Rheiner
149 Accident and Sick Insurance. (Kranken u Unfallversicherung) A Jaquet
150 Progressive Paralysis and Syphilis F Ris
151 Early Diagnosis of Pulmonary Tuberculosis (Concluded) G Rheiner
152 *Distension Ulcers in Obstruction of Intestine (Dehnungsgeschwüre. W Zimmermann
153 Progressive Paralysis and Syphilis (Concluded) F Ris
154 Trichocephaliasis R Kahane
155 *Curability of Gastric Cancer by Surgery (Heilbarkeit d Magenkrebses) T Kocher
156 Carcinoma of Body of Uterus (Corporis Uteri) Widmer
157 Hematoma of Ear (Othematom) Seiler
158 Etiology and Treatment of Typhoid W Silberschmidt
159 Dosage of Digalen K. Kottmann
160 Visceral Changes Due to Spinal Curvature. (Verkrümmungen d. Wirbelsäule) J Karcher
161 *Veronal Poisoning (Vergiftung) E Nienhaus.
162 Witzel's Drop Method of Producing Ether Anesthesia. (Aethertropfnarkose.) Arnd
163 Visceral Changes Due to Spinal Curvature (Concluded) J Karcher

141 Lumbar Puncture in the Mentally Affected.—Fankhauser reports on the examination of the cerebrospinal fluid in the case of 67 persons suffering from disturbances of the nervous system Among these there were 35 cases of paralysis, 21 of dementia præcox, 8 of epilepsy, 4 each of congenital dementia, alcoholic disturbances and senile psychoses, and one case of postapoplectic dementia This study included the estimation of the pressure of the fluid its macroscopic and microscopic appearances and its albumin content The findings of the author are in accord with those of other observers, who believe that the procedure is of some diagnostic value It possesses no therapeutic worth

143 Ruptures of Liver—Schönholzer discusses the clinical history of subcutaneous ruptures of the liver, and reports one case, that of a man who was caught between two freight cars Although the patient suffered intensely from symptoms of a severe internal hemorrhage, he was able, with some assistance, to seek medical aid at a distance of about a quarter of a mile The physical findings pointed to an injury of the liver and a laparotomy was done immediately A large jagged tear was found in the liver, from which an enormous hemorrhage had taken place A sterile compress was forced into the tear to check the hemorrhage, and the peritoneal cavity was freed of the accumulated blood—about two quarts The rupture of the liver was almost complete, and as its size precluded suture, the portion to the left of the rupture was removed A number of blood vessels were ligated, and the edges of the tear were brought together with sutures In order to support the liver it was sutured to the parietal peritoneum The resected liver mass weighed 320 grams, and measured 16 cm by 10 cm The patient slowly recovered and two months after the operation appeared to be none the worse for the injury

146 New Instruments—One of the instruments devised by Köhl is an angiotrypsic forcep to be used on the appendix, and the other is a curved sound, to be used in inverting the hernial sac in Kocher's operation for hernia The end of this sound is grooved like a Kocher's director, and serves as a point of resistance and a guide when making the buttonhole in the end of the sac.

152 Distension Ulcers—These ulcers which Zimmermann saw in three cases, are said by Kocher to be the result of disturbances in the circulation of the bowel, caused by an enormous distension of the intestine, such as often occurs above an occlusion The three patients whose cases are reported were the victims of carcinoma One patient had carcinoma of the sigmoid flexure, the second had carcinoma of the descending colon, and the third had carcinoma of the left ovary, which occluded the rectum at its commencement In the first case Zimmermann assumes that the ulcer was caused by pressure of hardened masses of feces, there being only one ulcer in the immediate vicinity of the occlusion In the remaining two cases there were many ulcers of varying size and depth, situated at some distance from the occlusion In these cases Kocher's theory of the formation of these ulcers probably is the correct one Zimmermann points out that the diagnosis in such cases is extremely difficult The prognosis is always grave, and the treatment operative

155 Surgical Treatment of Carcinoma of Stomach.—Kocher has done resection of the stomach 122 times, 25 times since the last report on patients operated on before September, 1904 In these 25 cases (24 gastric cancers, 1 gastric ulcer) there were only four deaths, a mortality of 16 per cent These deaths occurred in cases that were very far advanced, and in which the operation was undertaken with the sole hope of according relief from distressing symptoms Kocher discusses briefly the necessity of early diagnosis, and reviews the conditions on which such a diagnosis is dependent One of his patients is alive and well 19 years after the operation, another 10 years after, three patients 8 years, one patient 7 years, one 6 years after the operation, and three patients 4 years after the operation Including all patients operated on, according to Kocher's method, there are only 14 fatalities out of 92 cases, a mortality of 15 2 per cent

161 Veronal Poisoning—Nienhaus reports the case of a woman who took four grams of veronal with suicidal intent One hour after taking this dose she lost consciousness and remained in this state for almost twenty four hours, when she regained periods of consciousness The recovery of the patient was protracted, stretching over a period of about two weeks On the day following the ingestion of the veronal, the patient passed 100 c.c of urine, which on examination was found to contain 0 1 gram of veronal The symptoms observed in this case were typical, resembling those of uremia A notable feature in this case was the prolonged convalescence

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164 Stenosis of the Pylorus from Diaphragmatic Hernia (Stenosi acuta del piloro da ernia diaframmatica) P Conti
165 Tuberculosis of Alimentary Origin. (Sulle tubercolosi di origine alimentare.) A Bonome
167 *Studies on the Gonococcus. (Studii sul gonoc.) A Bruschettini and L. Ansaldo
168 *Pleural Autoserotherapy (Autoseroterapia pleurica) E Jona.
169 An Improvement in Eosin Staining Use of Methylene Blue for Neurodiagnosis and Clinical Cytodiagnosis (Un perfezionamento nella tecnica della colorazione coll eosina bleu di metilene.) C Minerbi